Industrial Equipment News

FOUNDED 1933

ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 8421**

Drilling - Motor driven head with air feed for holes to 5/16 inch

Source: DUMORE COMPANY
1300 17th St., Dept. IEN, Racine, Wis.

Protects little drills

Series 24 designates a new motor driven drill head with built-in controls for pneumatic feed and retraction, in semi-automatic or automatic operation, to drill, ream, counterbore, spot face, mill, burr or drive a standard reversing tapping head. The controls permit push button actuation of a single head or of several in a multiple set-up for simultaneous or sequence action. A hydraulic cylinder can be positioned, in space provided for it in the housing, to control the feed rate adjustably. An electronic repeat cycle timer can be added for repeated advance and retraction of the spindle in deep hole drilling.

The head mounts by its cylindrical nose in a clamping bracket, for operation vertically as shown in the illustration or in any other position. The motor is a ⅓ or ½-hp. unit with positive toothed belt connection over toothed pulleys. These pulleys can be changed to provide 10 spindle speeds between 440 and 7,420 rpm. Feed pressure is adjusted by turning one of two regulators on the side of the housing to set a required pressure from a shop air line connection. Retracting pressure is set at the second regulator. Feed adjustment is maximum at 400 lb. based on 100-lb. air supply.

Fast approach can be adjusted to 600 ipm. Return is maximum at 300 ipm. Controlled feed rate, employing the optional hydraulic cylinder unit, is to 60 ipm. The head is designed with electrical plug-in receptacles and connectors for quick set-up or change between types of operation. The enclosed controls prevent unauthorized changes. Lubrication is introduced through a combination filter and air line oiler. The switches and the spindle quill are sealed, the latter with a bellows type seal, so no dirt or moisture can enter.

The head provides a maximum stroke of 3 in. for its ⅝-in. chuck. It measures 23½ in. in line with the spindle by 8¾ by 15 inches. Weight is about 88 pounds. List price is $670 for the basic assembly with a ⅓-hp. 110-volt 60-cycle single-phase motor. The hydraulic control adds $105. The cycle timer also adds $105. The head represents further development of the original motor driven air feed unit, previously described IEN-8122-50.

If you write maker identify as **IEN - 8422**

Purchasing Guide - Available free to Industrial Equipment News readers

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

Free on request

We suggest your prompt reply to this offer to send you a free copy of the 1954 Edition of Thomas' Register Junior, if you have not already made your request as a result of the offer we made on this same subject last month.

This 1,500-page book is a companion publication to the main Thomas' Register. It contains the names, addresses, ratings, and products manufactured under some 50,000 product headings. We will accept reservations as long as the supply lasts. We expect the book to be ready to mail to you in September.

If you write maker identify as **IEN - 8423**

Cleaning - Ultrasonic generator and tank transducer for precision work

Source: BENDIX AVIATION CORP.
Dept. IEN, Davenport, Iowa

Just a brief immersion

Bearings, control mechanisms, instruments, optical lenses, watches and timing devices, intricate precision mechanisms, are cleaned to the last degree when they are immersed in water soluble detergent or cleaning solution held in the tank type transducer of this new ultrasonic equipment.

High frequency waves are transmitted through the solution surrounding the work to force the solution to cavitate or "cold-boil" with countless minute bubbles. These bubbles blast away particles of grease, grit and any other foreign matter. They reach into normally inaccessible recesses. They will clean metal, glass, rubber, plastics, ceramics.

The action removes polishing compounds, rouge, oils, general dirt, minute metal and non-metallic particles. The sound frequency "wraps around" the parts being cleaned to penetrate into blind holes and mechanical interstices to do a thorough job.

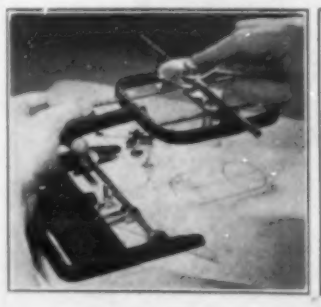
The equipment is available in work chamber diameters measuring 4, 7½ and 12 in. in diameter and depth. This chamber connects electrically to the ultrasonic generator which encloses the electrical and electronic equipment.

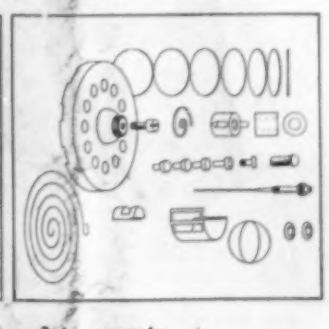
An assembly that has been in service for the company's own use, for a 12-mo. period, has shown a solvent cost of $351, as compared to $18,356 for a similar period using other types of cleaning equipment. Direct labor costs have decreased by 75 per cent in connection with cleaning stainless steel bearing houses, brass lock nuts, bronze gears and other precision gyroscope parts.

If you write maker identify as **IEN - 8424**

Drafting - Circular machine quickly makes three dimensional views

Source: CHARLES BRUNING COMPANY
4700 Montrose Ave., Dept. IEN, Chicago 41, Ill.





Simple to set and to operate

Precise ellipses, spirals, helixes, arcs can be made quickly and without involved calculations by employing this new circular drawing machine. In effect, it is a universal compass with a built-in protractor. Two settings on the compass establish the major and minor diameters for an ellipse in any ratio by degree or from points on a drawing. Repeated and related ellipses, on the same axis, can be completed with the aid of the instrument's parallel rolling action. The protractor provides an accurate means to determine angles and to divide circles, ellipses, spirals, helixes and arcs in degrees.

The simple underlying principles of operation can be mastered in fifteen to thirty minutes by following the illustrated instructions supplied with the instrument. Complicated isometrics, exploded views present no problem.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

AUGUST, 1954
VOL. 22 No. 8

PRODUCT FINDING INDEX

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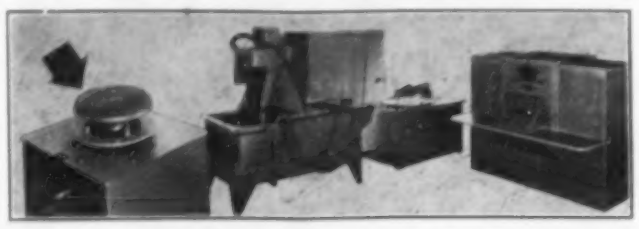
If you write maker identify as **IEN - 8425**

Testing - Ultrasonic equipment to detect and locate flaws in metal part

Source: SPERRY PRODUCTS INC.
1000 Shelter Rock Road, Dept. IEN, Danbury, Conn.



Built to specific order

Simac trade names new automatic assembly of the Reflectoscope, previously described IEN-1915-50, with automatic sequence control. Work and search head are immersed in water as the means for sound transmission. Recording equipment charts the results of a complete test. Servo operated positioning equipment, for the search head, establishes and carries out a pattern that will assure complete inspection of the work piece from all angles.

The part for which the equipment has been developed initially is a jet engine rotor forging. The inspection sequence requires approximately 15 minutes. The record is made on a 28-in. circular chart. At the same time, visual inspection can be maintained by watching the screen of the Reflectoscope in the center of the control housing.

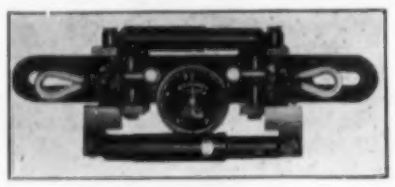
Operation begins at the accessory set-up table on which the work piece is aligned to a jigging plate. It is then transferred to the turn table of the scanning machine where it is immersed in water in the tank along with the search head that connects to the sound generating and receiving equipment in the Reflectoscope assembly. The search head is mounted so it can pivot through a vertical angle on a vertically moving carriage and this carriage is mounted on a horizontally moving carriage that travels along the top of the tank. The head is positioned vertically, horizontally and at a required angle in accordance with a punched tape.

The action is timed in step with the sound generator so the search head transmits short burst of sound and receives back an "echo" from the work which is indicated on the Reflectoscope screen and is recorded on the chart. Both will show satisfactory conditions if the metal is sound throughout in line with the point of penetration of the search head. A discontinuity in the structure is immediately signaled back for indication and recording.

The company is prepared to study and make recommendations for applications of the automatic equipment on work pieces submitted for this purpose together with basic data on conditions and quantities involved.

If you write maker identify as **IEN - 8426**

New application of the Dillon Dynamometer, in a traction frame equipped with pulling eyes, is employed by a manufacturer of diesel mine locomotives to read the traction capacity of the locomotive. Hydraulic shock absorbers in the traction frame isolate the gage so it will not be injured by shock loading. W. C. Dillon & Company 14620 Keswick St., Dept. IEN, Van Nuys, Calif., can supply details.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8427**

Do you know about the new power jacks? The remote controlled hydraulic jacks? Jacks that lower loads automatically, safely and quickly? Do you know how to select the right jack for the job at hand? How to instruct workmen on the safe use of jacks and how to keep jacks in good working order? Duff-Norton, the world's oldest and largest manufacturer of all types of lifting jacks for every industrial use, has just published a new 40-page, illustrated jack manual—the most complete encyclopedia on the subject of lifting jacks ever attempted. This new manual contains complete specifications on more than 300 different types and sizes of ratchet, screw, and hydraulic jacks from 3 to 100 ton capacities, both manual and power operated. It contains 40 pages of useful information that will enable you to get lifting, lowering, pushing and pulling jobs done faster, safer, at lower cost. Write today for your copy of Bulletin 204-M. It's yours for the asking! **The Duff-Norton Manufacturing Co. P. O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.**

If you write maker identify as **IEN - 8428**

Link Hi-Precision Gear Box shows New Departure ball bearings.

Nothing Missing in the *LINK!*

Take off . . . rough weather . . . enemy aircraft . . . Link's F-89D Jet Flight Simulator provides nearly every flight situation. Extensive use of New Departure **ball** bearings assures the same operational characteristics, the same accuracy, so essential in actual aircraft equipment.

If you design for aircraft equipment, it *will pay you to talk to your New Departure engineer, today!*

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

If you write maker identify as **IEN - 8429**

FIRE!

Unless you get the jump on fire, you stand a good chance of kissing your business good-bye. That's why you need a Kidde portable extinguisher near *every* fire hazard in your plant.

Protect motors, electrical equipment, flammable liquids and machinery with Kidde portables. Then, when fire strikes, you're ready.

Grab a Kidde CO_2 or dry chemical portable, aim it, pull the trigger, and—Whoosh! Fire's out! Get protection — contact Kidde.

Kidde

Walter Kidde & Company, Inc.
836 Main St., Belleville 9, N. J.

If you write maker identify as **IEN - 8430**

Here's an easy way to make . . .

BIG SAVINGS on Small Parts

Photo courtesy of Allied Soldering & Brazing Corp., Rochester, N. Y.

Thousands of small parts now made by casting, forging or machining from the solid could be made faster and at much less cost by switching to stamped parts brazed with the low-temperature silver alloys EASY-FLO and SIL-FOS. The part below is an example. Formerly an investment casting, it is now made of two stamped pieces brazed with a little piece of EASY-FLO45 wire. One girl with a jig and a gas torch turns out 800 per 8-hour shift.

CHECK your small parts and see how much you can save by changing to EASY-FLO or SIL-FOS brazed construction. We'll gladly send a field service man to help—with no obligation.

FOR FULL *EASY-FLO* AND *SIL-FOS* FACTS
write today for
BULLETIN 20

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
Distributors in Principal Cities. In Canada: Handy & Harman of Canada Ltd., Toronto

If you write maker identify as IEN - 8431

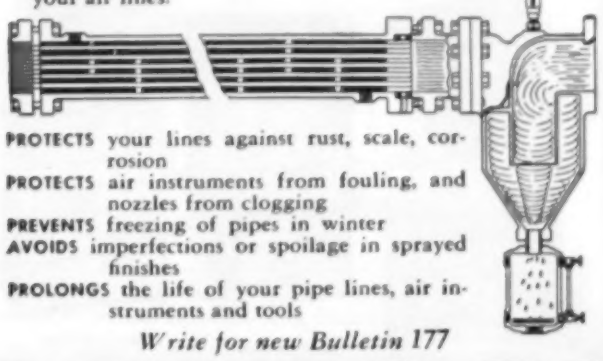
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 177

R.P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 8432

DURALL-T* TYPE UF is fully approved for underground feeder

Yes, it can be buried *directly* in the ground. Tough thermoplastic insulation and jacket resist moisture, soil acids, and crushing. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N.Y.* *Reg. U. S. Pat. Off.

the right cable for the job

ANACONDA® WIRE AND CABLE

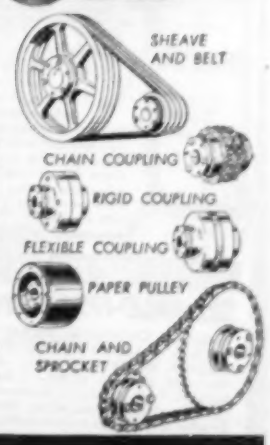
If you write maker identify as IEN - 8433

STANDARDIZE YOUR PLANT ON Browning's ONE-BUSHING SYSTEM

• *NO REBORING*
• *NO WELDING*
• *OFF-THE-SHELF*
• *READY TO USE*

Browning's one-type split taper compression bushing serves your entire mechanical power system. For single and multiple groove sheaves, pulleys, sprockets, and rigid, flexible and chain couplings. Fast, simple, economical installation and disassembly.

• *WRITE FOR CATALOG GC101 and name of Browning Distributor near you.*



Browning MANUFACTURING COMPANY MAYSVILLE, KENTUCKY

If you write maker identify as IEN - 8434

Plastic - Epoxy base resins to make dies, fixtures, jigs, patterns

Source: KISH RESIN INC.
1301 N. Turner St., Dept. IEN, Lansing 6, Mich.

A form die **A drill fixture**

The company announces availability of a new line of epoxy resins with the necessary catalyst, accelerators, fillers, parting agents, glass cloth, waxes, for complete tool and die construction. The company also is prepared to supply instructions along with supervisory service and methods assistance by experienced tool engineers. The epoxy resins, based upon Shell Chemical Corporation's Epon resin, are available in liquid and dry form in quantities to meet any requirement.

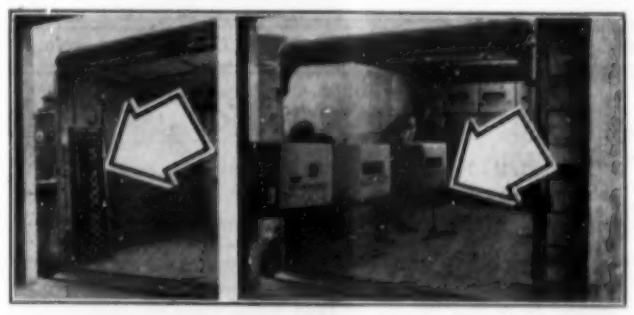
Four types of epoxy resin are available. One is a liquid resin that can be cast at room temperature to provide a tool surface which does not require machining. The second is a core resin formulated to provide a stable material with compression strength to 24,000 lb. per square inch. The third is a laminating resin for use with glass cloth. The fourth is a resilient resin characterized by excellent dimensional stability, good adhesion and resistance to chemical attack.

Shrinkage from mold dimensions is 0.0001 in. per inch. The resin has good heat resistance when exposed continuously at 180 deg. F. The casting resin registers 85 to 100 on the Rockwell M scale. Each resin in the line can be stored indefinitely.

If you write maker identify as IEN - 8435

Conveying - Portable wheel unit telescopes out from 52 to 122 inches

Source: ASSOCIATED METAL FABRICATORS
18-20 Sebago St., Dept. IEN, Clifton, N. J.



Model 75

Tel-O-Veyor is a new telescoping wheel type conveyor weighing 70 pounds and measuring 12 in. across its operating surface. It can be set up for a minimum length of 52 inches. It extends to 122 in. to reach into a truck or car or to move equipment across an aisle that must be opened periodically for traffic. The conveyor can be carried inside a truck for loading and unloading operations. It mounts on an adjustable stand which can be set at 18 to 32 in. in height.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8436

SAFETY EQUIPMENT FOR ALL INDUSTRIES

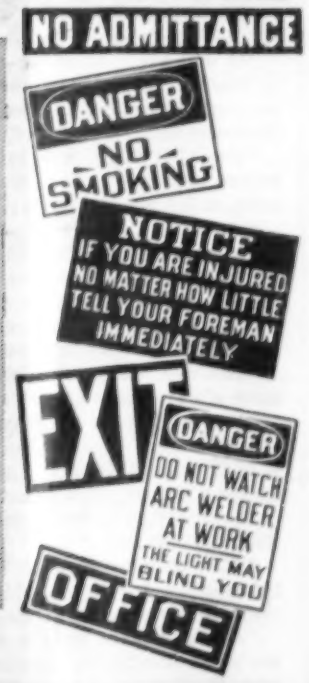
Porcelain Enamel Signs!

• ATTRACTIVE
• PERMANENT
• ECONOMICAL

A complete line of Signs for every industrial need. Stock wordings for warnings, safe practice reminders and general plant notices . . . SPECIAL SIGNS TO ORDER.

Write for Bulletin No. 45

IPCO



IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH ST. • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 8437

LUBRICATION ECONOMY

"LUBRIPLATE Prevented Parts Replacements and Tie-ups"

After clearing 500 acres of salt marsh for the Leslie Salt Company, J. O. Archibald, contractor of Redwood City, California said, "*LUBRIPLATE kept equipment rolling in mud, muck and water.*" You may never have an earth-moving job like this to do, but if you turn a wheel in any industry, you can profit by Mr. Archibald's experience.

1. LUBRIPLATE reduces friction and wear

2. LUBRIPLATE prevents rust and corrosion

3. LUBRIPLATE is economical to use

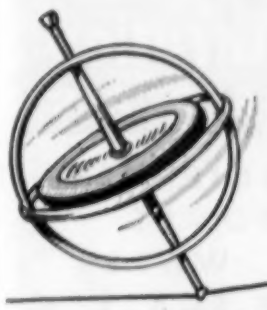
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N.J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 8438



CASTELL push button LOCKTITE lead holder has PERFECT BALANCE

Perfect balance makes Push Button CASTELL LOCKTITE Holder the king of its class.

Exclusive collet holds lead in **bull dog grip**, preventing slipping or turning.

No graphite dust stains your fingers—because with one-hand push-button action you extend and retract the lead. *No need to touch graphite.* Comfortable "wood-pencil" feel—not metallic.

Equipped with easily-replaced clutch, giving your LOCKTITE indefinite life.

Imported CASTELL 9030 Lead inserted in your LOCKTITE Holder gives you the combination for brilliant results on your drawing board. Ask your Dealer for both—LOCKTITE Holder and Imported CASTELL 9030 Lead in 19 degrees, 7B to 10H.

AW FABER-CASTELL PENCIL COMPANY, INC., NEWARK 3, N. J.

If you write maker identify as IEN - 8439

The **Metals Handbook**

1332 Large pages
1752 Illustrations
1057 Tables
803 Articles
1,620,000 Words
40,000 Copies in use

Here is a book without a competitor . . . a book 25 years in the making. The current, 7th edition of the Metals Handbook was compiled and written by 68 committees of the American Society for Metals; more than 500 metals engineers were hand picked by the Society as the top experts, the men best qualified to write the most authoritative possible reference book on metals, metal properties, fabrication and uses. The book they wrote is the Metals Handbook. It is divided into 37 principal sections, and contains 803 separate articles and data sheets on metals, metal shopping, forming, heat treating, welding, machining foundry work, cleaning, finishing, testing, inspection, control and research techniques. All metals, all processes are included. The 64-page index and 4-page section on how to use the book make it easy for any reader to find what he wants. Over 40,000 copies of this edition are now in use by engineers, production men, executives, purchasing agents, and others. Order your copy today by returning the coupon below. Price is $15.00.

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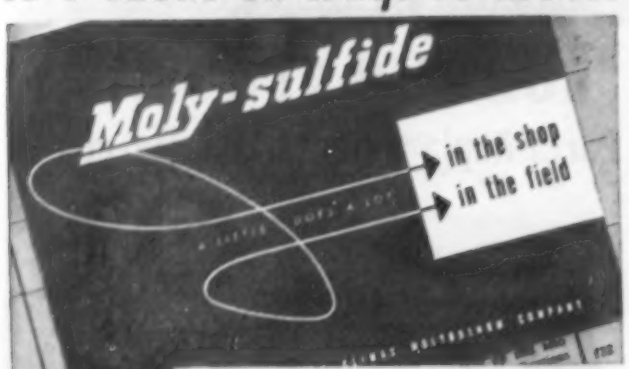
City ..... Zone ..... State .....
☐ $15.00 enclosed ☐ Bill me

If you write maker identify as IEN - 8440

154 ideas on ways to use...



154 varied applications of molybdenum sulfide in the shop and in the field are described in a new booklet now available. This solid-film lubricant has demonstrated unique anti-friction properties under conditions of extreme pressure, high velocity, elevated temperature, or chemical attack.

The 40-page booklet contains the records of solved lubrication problems—some might solve your own. Write now on your business letterhead for this booklet.

Moly-sulfide
A LITTLE DOES A LOT

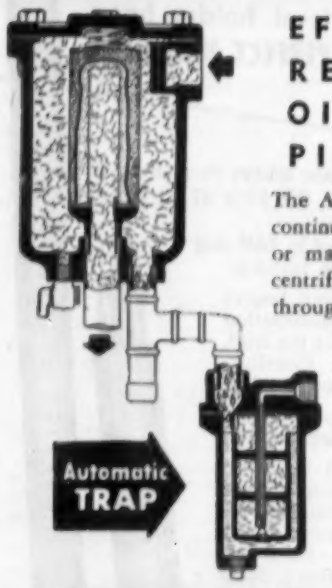
The lubricant for extreme conditions

MS-6A

Climax Molybdenum Company
500 Fifth Avenue, New York City 36, N.Y.

If you write maker identify as IEN - 8441

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone Filter gives* continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operations.

Write for complete data Bulletin 177

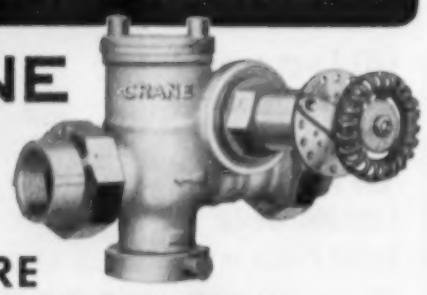
R. P. ADAMS CO., Inc.
219 E. Park Drive • Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

If you write maker identify as IEN - 8442

in-and-out RELIABILITY

CRANE



PRESSURE REGULATORS 250 POUNDS STEAM OR AIR

When supply pressure is greater than you want . . . when you need automatic protection for valuable equipment—then install Crane quality pressure regulators. They *hold* their predetermined outlet pressure even when there is no demand—even on dead-end service.

Simple to operate, compact, convenient to maintain. Made of Crane quality bronze with malleable iron union rings and tailpieces on inlet and outlet ends. Fitted with regulating springs and diaphragms for any of the following ranges of outlet pressure: 1 to 10, 5 to 30, 20 to 100 and 90 to 200 pounds. Sizes ½ to 2-inch. Check your Crane Catalog for complete information.

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Industrial Equipment News IEN

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EPA SBME NBP

VOL. 22 AUGUST, 1954 No. 8

Your Inquiries

Industrial Equipment News introduced a new reader service form in March of this year designed to meet suggestions that have accumulated over the years. In particular, its purpose is to give you the opportunity to designate, in some detail, the type and extent of specific information you desire on selected subjects. We quote from the comments that have come to us—

"We approve the new form as an added convenience in quickly requesting specific information on several products."

"I like the idea to check when we want a salesman to call on us."

"The new form is a good deal more selective on our particular interests in a manufacturer's line."

"Usually write manufacturers direct but will find more use of the new form."

"The new form is more likely to get the data we want."

"This will correct the only weakness in your reader service program."

"We like the option to check items for general information and also for specific information. Some items need no further information, others do."

"The new form looks good. We did not always get the information we required on the old form."

"More details now will save further correspondence and time later on."

"The new form will help the supplier determine if he should put in a call to the request for information."

"It will avoid salesmen calling when only literature is desired for future reference. Some companies ask local salesmen to make personal visits, unless there is means to tell them not to."

"The new form constitutes a 'pin point' system. It makes requests for information more accurate and assists in its faster delivery."

"Since the form can be used to specify what we want, it will save time for us as well as for the salesmen."

"Product manufacturers are not necessarily mind readers, a fact that the new form recognizes."

"It is a welcome improvement over the bingo number cards that have become the fashion in many quarters."

"The new setup will help our company because we have always had to write again for prices."

"Many times we have requested information for our reference files with no specific application in mind. It is then embarrassing to have a salesman call thinking he has a big deal on. The new form will stop all of that."

"Your's is an excellent service. It will be even better with the new form."

"Since the new form can be employed to request more information from the manufacturer it will save additional correspondence with the user."

"The new form lets the supplier know exactly what we want. It expedites sending of samples, prices, salesmen. It saves the salesmen unnecessary trips."

"This may be the most constructive move ever taken by any paper since invention of the reader reply itself."

W. E. Irish.

If you write maker identify as IEN - 8443

750 DIFFERENT CABINET COMBINATIONS

Available for Small Parts Storage, Handling or Display. A Type and Size for Every Need.

We can supply you the perfect cabinet for your particular requirements. 750 different combinations can be CUSTOM - BUILT at production line prices. Free catalog upon request.

AKRO-MILS, INC. Box 989-N AKRON 9, OHIO

If you write maker identify as IEN - 8444

READY FOR INSTANT SERVICE

A Horton elevated water tank provides 24-hour-a-day fire protection. Water from the tank is available whenever it's needed. Consider this fact when you install or expand your fire protection system. Your decision may save both lives and money.

Horton elevated water tanks with ellipsoidal bottoms are built in standard capacities from 15,000 to 500,000-gals. State capacity, height to bottom and location when requesting prices.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois

Atlanta • Birmingham • Boston • Cleveland • Detroit
Houston • Los Angeles • New York • Philadelphia • Pittsburgh
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Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN - 8445

SAVE UP TO 85% ON GOVERNMENT SURPLUS

MAGNI-FOCUSER
Has five ground lenses of optical glass. Neutralizes eye strain from close work. Binocular design gives third dimensional vision. Allows freedom of both hands. Wear over glasses. Plastic frame with adjustable headband.
SIZES: 20" focal lgth. 1½ power—14" focal lgth., 1½ power; 10" focal lgth., 2½ power; 8" focal lgth., 2½ power . . . . . price each ONLY 10.50

HYDRAULIC EQUIPMENT
We stock over 100,000 Hydraulic Cylinders in 106 different types and sizes. These can be adapted wherever tremendous power is needed to push, pull, hoist, mould or drive, etc.

SPECIAL
Gives 28,000 lb. thrust using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on a low pressure air system. Has 4" bore; 18" stroke; 30½" long. Ideal for shop.
Part No. 79 29.95 NEW 43.95

OTC TOOLS
See our complete line. Pullers for Gears, Bearings, Wheels, Pulleys, Bushings, Shafts, etc.

NEW 10 TON HYDRAULIC PRESS
Use this Press in the Shop or take it with you on the job. Frame is 4" welded channel iron. Has 4½" stroke, 2½" diam. ram. Valve operates piston in both directions. Adjustable platform. Positive power Hand Pump with handle. 2000 PSI pressure gauge. SIZE: 60" high, 27" wide, 29" base. 129.00

HYDRAULIC HAND PUMP
Operating pressure 1500 PSI. Cap., 1.5 cu. in per complete cycle . . . 12.75

HYDRAULIC ACCUMULATORS
A-28 FLOATING PISTON TYPE — 4" x 18" Built to stand 2,000 PSI 12.75
A-5 VICKERS — 10" dia. Bolt type. Built to stand 2000 P.S.I. 24.50

NOTE: Stocks include bargains in Hydraulic Pumps — Valves — Motors — Boosters — as well as Oil, Water and Fuel Pumps, etc.

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Palley SUPPLY CO. 2263 E. Vernon Ave. Dept. IN-8 Los Angeles 58, Calif.

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- Maximum strength and bearing surface
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- Long service-life
- Optimum operating angle
- Close quarter operation
- Accurate surface grinding
- High concentricity
- Minimum weight

LOVEJOY HAS THEM ALL!

Available in 13 standard sizes — diameters ½" to 4" — bore ¼" to 2" — lengths 2" to 10⅝"

WRITE NOW FOR CATALOG AND PRICES

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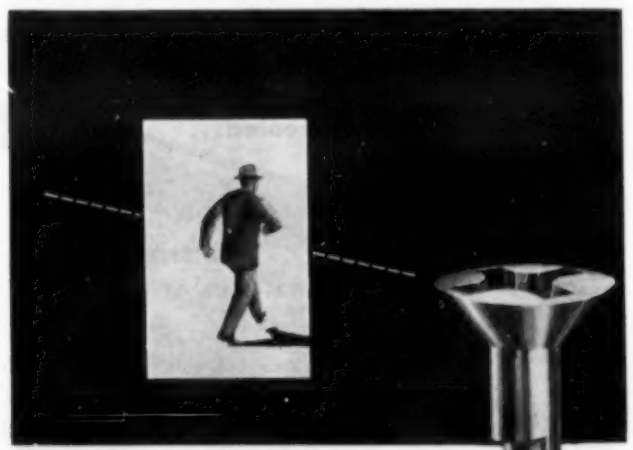
Manufacturers of flexible couplings, universal joints, variable speed pulleys and variable speed transmissions.

4814 W. LAKE STREET CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 8447



For Want of a Screw ... a Customer Lost

Today's lower inventories require service—*quick service!* Domestic manufacturers are ready for new service demands because know-how and service have built American industry. You profit from both these "home products" when you order from Southern. Here Wood Screw packages alone fill nearly two miles of 24-inch shelves, with plenty of room for quick loading from shelf to truck—sometimes in as few as five minutes.

Write us your requirements. Samples and free Wood Screw catalogue upon request. Box 1360-E

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Complete Stocks of PLYWOOD AS CLOSE AS YOUR TELEPHONE!

ARmitage 6-7100

AETNA carries *complete* stocks of plywood from mills all over the world. Out of this wide range of stock AETNA can furnish plywood for any industrial or decorative use.

AETNA gives the widest possible choice: Hardwood plywood for manufacturers to give distinctive elegance to products . . . wall paneling for offices and special furniture . . . plastic surfaced plywood for table tops and counters. All standard sizes and many odd sizes, full range of grades, uniform high quality stock, fast delivery.

AETNA PLYWOOD & VENEER CO.

HEADQUARTERS FOR A WORLD OF PLYWOOD

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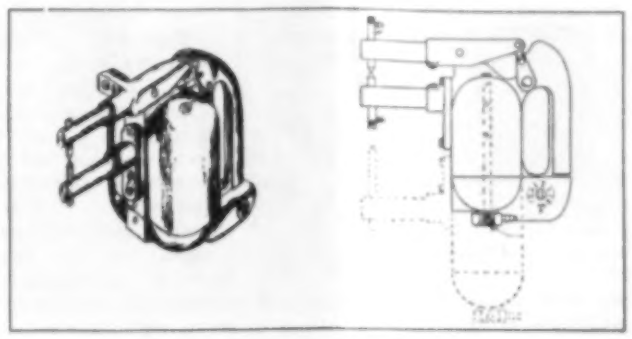
BRANCH WAREHOUSES:

Detroit, Grand Rapids, Indianapolis, Peoria, Rockford

If you write maker identify as IEN - 8449

Welding - Portable spot machines rate to ¼ in., thyratron control

Source: AMPOWER PRODUCTS CO.
10207 S. Ridgeland Ave., Dept. IEN, Oakland 70, Ill.



Weighs 20 to 38 pounds

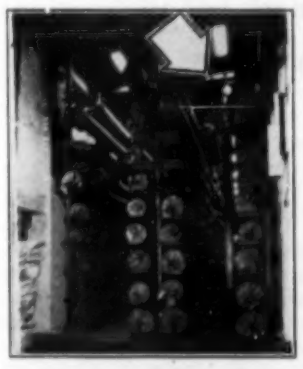
Three models, rating three pieces of 20-gage cold rolled steel, on light production work, to $\frac{3}{16}$ in. of cold rolled steel at high production, are included in the company's new Series-5400 line of portable spot welders. All three are available to specification for operation on 110 or 220-volt ac. The first two are adjustable for spacing between the upper and lower electrode holders from 1½ and 6½ inches by positioning the lower holder on a series of holes on the front of the housing. The largest machine can be adjusted for an opening to 12 inches. Weights range from 20 to 38 pounds.

The transformer secondary in the medium duty and heavy duty machines has provision for water cooling. The electrode tips are similarly designed. The medium duty and heavy duty machines include built-in thyratron electronic control that can be set for a welding interval between 0.2 and 1.0 second. Control for the light duty machine centers in a semi-automatic switch. The electrode holders are removable for replacement with special holders or fittings for a variety of work shapes. Assembly is in an aluminum housing with a support loop for suspension from overhead.

If you write maker identify as IEN - 8450

Crane - Automatic equipment to store and retrieve roll materials

Source: CHICAGO TRAMRAIL CORP.
4000 Washington Blvd., Dept. IEN, Chicago 24, Ill.



Built to order

New assembly of the Trak-Rak crane, previously described IEN-3944-51, provides for automatic pick-up of paper rolls measuring 24 in. in diameter by 9, 12 or 15 ft. in length. The pick-up action is extended by automatic control for travel to a designated rack location, to level the pick-up forks on the traveling carriage with the rack, to discharge the load and return to a starting position.

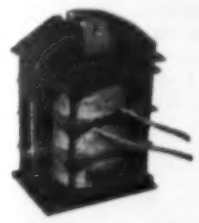
The fork type load carrier rides beneath the crane bridge. The bridge is supported on trucks carried on rails mounted on top of the storage racks. The crane stacks work to 27 ft. in height above the floor line in an overall clearance height of 28½ feet. It operates in 50-in. aisles.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8451

SOLENOIDS

A-128 solenoid; 18 lbs. at 85% voltage; 3" stroke.



AS-427 solenoid; 14 lbs. at 85% voltage; 2.5" stroke; 600 strokes per minute.

A-100 line of pure D.C. solenoids without cut-out switch; ranging from 1.5 lbs. to 100 lbs.

AS-400 line of high speed solenoids; ranging from 1.5 lbs. to 14.0 lbs. Speed up to 600 strokes per minute.

We recommend that you get acquainted with these two lines of solenoids. They can do things for you that you never thought could be done.

We make 44 other standard lines of solenoids. Also solenoid brakes up to 24,000 ft-lbs. torque capacity.

See our catalogs in Sweet's Catalog Service. Ask for more information.

TROMBETTA SOLENOID CORP.

329 N. MILWAUKEE STREET • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 8452

CHROMALOX gives you the LOW COST answer for

VARIABLE HEAT

NON-BREAKABLE INFRARED

SAFE OPERATION

CHROMALOX ALL-METAL *Electric* RADIANT HEATERS

The new and improved CHROMALOX heating principle gives ALL infrared heat advantages: high heat intensity, "color blind" infrared radiation, heat that's infinitely variable! You get more satisfactory results at reduced costs in baking, drying, curing, preheating and similar uses with CHROMALOX Radiant Heaters.

Write for FULL DATA

Tell us what you want to do with infrared heat and we'll send you data sheets covering your needs.

Radiant Heat Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Electric Heaters Advertisement, Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 8453

For fast . . . CLEAR-CUT MARKING of ROUND PARTS or TUBING —in various diameters

MODEL GRD-950-1 MARKING MACHINE

Mark collets, tubing and other round parts or products of various diameters, economically with this machine. Part is placed on mandrel and a quick turn of the lever rolls marking into metal neatly and legibly. Investigate today!

Write for Complete Data!

Mecco SAFETY MARKING TOOLS M.E.CUNNINGHAM CO.

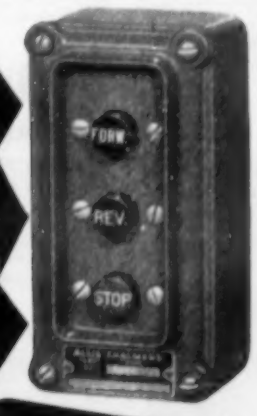
1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN - 8454

Start

Reverse

Stop



ALLIS-CHALMERS Pushbutton Control Stations

ALLIS-CHALMERS has a line of standard and heavy-duty pushbuttons to meet your motor starting, stopping, reversing needs. Both types are available in general purpose enclosures for surface or flush mounting and in a variety of special purpose cabinets. All have ample space for wiring, inspection and maintenance.

For complete information on the various combinations of selector switches and pilot lights available, call your nearest A-C representative or write Allis-Chalmers, Milwaukee 1, Wisconsin. Ask for Bulletin 14B7132.

A-4364

ALLIS-CHALMERS

If you write maker identify as IEN - 8455

Gets maximum efficiency from your conveyor system.

Ideal for switching production lines to various machines for isle system warehousing, assembling orders and all gathering and distributing uses.

Standard Widths: 11½", 15", 18"
Through & 45° R & L.
Spur Switch: 45° R. or L. & Through.

May be furnished with electric or pneumatic Remote Control.

● WRITE FOR PRICES ●

METZGAR CONVEYOR CO.

417 DOUGLAS N. W.

MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 8456

every study shows a Handling Saving

80 TONS OF SUGAR PER DAY

SAVES $30 ON EVERY CAR UNLOADED

RETURNS 84% OF ITS COST

Many companies are checking their handling problems against the American MonoRail Case Study File of "Engineered Applications." The file contains a series of case studies taken from many successful American MonoRail installations.

If you want to lower your handling costs, speed up production and cut maintenance overhead, let us send you this file. Just drop us a line on your business letterhead, asking for "Engineered Applications File F-1."

AMERICAN MONORAIL COMPANY
OVERHEAD HANDLING EQUIPMENT
13111 ATHENS AVENUE • CLEVELAND 7, OHIO

If you write maker identify as IEN - 8457

NEW PORTABLE **BAND SAW**

Cuts metal 15 times faster than a hack saw!

Porter-Cable PORTA-BAND Model 524 $215

Portable, compact, light—take Porta-Band anywhere, use in any position. Powered for heavy duty. Eliminates fatigue—cuts costs.

Cuts thru 1½" cold roll steel in 41 secs.! That's 15 times faster than a hand hack saw . . . 2½ times faster than larger power hack saws! Handles all materials up to 3¼" dia. round, 3¼" x 4¼" rectangular.

WRITE TODAY for full information

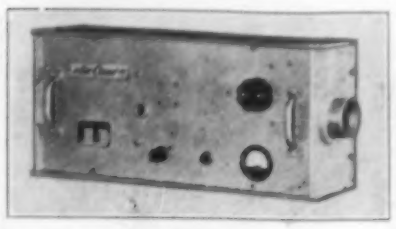
PORTER-CABLE Machine Co.
2208 N. Salina St.
Syracuse 8, N.Y.

Porter-Cable
Quality Electric Tools

If you write maker identify as IEN - 8458

Deodorizing - Ozone generator mounts on air circulating suction duct

Source: GENERAL OZONE CORP.
855 W. Washington Blvd., Dept. IEN, Chicago 80, Ill.



Destroys odor

Type CV is a new assembly in the company's Air-Clear line of ozone generators. It is designed to use in connection with forced air ventilating and heating. It is arranged for direct assembly on the side wall of a blower or an air duct on the suction side of the installation. The unit is available in 20 to 50-watt ratings to serve installations handling 1,000 to 4,000 cfm.

Dimensions range from 20 by 10 by 6 in. to 20 by 10 by 10 inches. List price is $325 to $365. The ozone is delivered into the duct stream to destroy objectionable air conditions so the duct will deliver clean smelling air.

If you write maker identify as IEN - 8459

Sealing - O-ring packings and gaskets, pressure to 1,500 pounds

Source: GREENE TWEED & CO.
342 Elm Ave., Dept. IEN, North Wales, Pa.

Technical data in Bulletin MP-50

The company announces addition of a line of molded O-ring packings and gaskets for moving and stationary connections to withstand pressure to 1,500 lb. and continuous duty at temperatures between minus 40 and plus 212 deg. F. One of two compositions provides for intermittent service to 300 deg. F. in contact with lubricating oils and coolants. Other synthetic rubber compositions can be specified for special service conditions.

The packings range in size from ⅛ to 15½ in. in nominal inside diameter and from ¼ to 16 in. outside. The gaskets are 1⅝ to 10 in. inside and 1⅞ to 10¼ in. outside.

If you write maker identify as IEN - 8460

Marking - Decalcomania combines trade mark and instructions

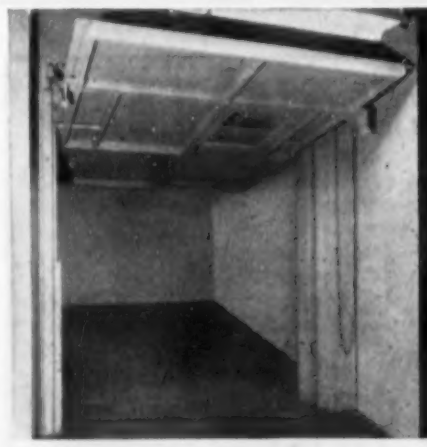
Source: MEYERCORD COMPANY
5323 W. Lake St., Dept. IEN, Chicago 44, Ill.

The Kwik-Strip decal

The company announces development of a new type of decalcomania in which a new paper is employed as the backing strip and no water is required in connection with application. The strip comes off clean to present a self-adhesive surface for application on any clean area. Application is permanent.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8461



UP AND OUT OF THE WAY... FAST

Truscon Industrial Steel Doors are fast moving, easy to operate, mechanically or by hand. Wide clear openings speed materials movement. Variety includes straight slide, accordion, vertical lift, turnover, lift-swing, canopy, and crane doors. Sizes for every use. Weathertight. Able to withstand severe windloads. Write for illustrated catalog.

TRUSCON®

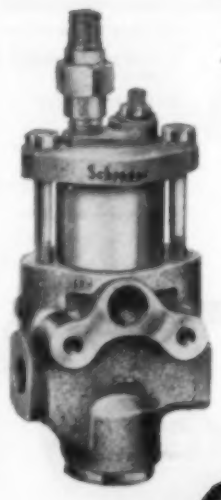
TRUSCON STEEL DIVISION
REPUBLIC STEEL

1094 ALBERT STREET • YOUNGSTOWN 1, OHIO
EXPORT DEPT.: CHRYSLER BLDG., NEW YORK 17, N.Y.

A NAME YOU CAN BUILD ON

If you write maker identify as IEN - 8462

Schrader Pilot Valves for Remote Control of Air Systems



From any convenient spot, you can actuate air equipment by means of a Schrader Pilot Valve. Simply install in the main supply line at the point of operation, and add a small actuating valve at the point of control.

Pilot valves are available in two-, three- or four-way types, and can be supplied with timers to deliver air from a fraction of a second to as many as desired.

The Schrader catalog gives complete information on pilot valves, as well as the full Schrader line of air operated products. Write for it today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-44, Brooklyn 38, N. Y.

If you write maker identify as IEN - 8463

Lightweight **HELIARC TORCH**

is water-cooled...

FOR EFFICIENT INERT GAS WELDING AT LOW COST

You can make high quality welds every time with this lightweight, 300 amp. HELIARC HW-10 torch. Both the torch body and power cable have all-internal water-cooling for cooler operation even when welding continuously at full capacity. Yet cleaning is easy for all water passages are straight. Electrode adjustment is quick and simple, too. No wrenches needed. And electrode stub loss is minimized by an improved water-cooling system. Call your nearest LINDE representative today for more details on the HELIARC HW-10 torch.

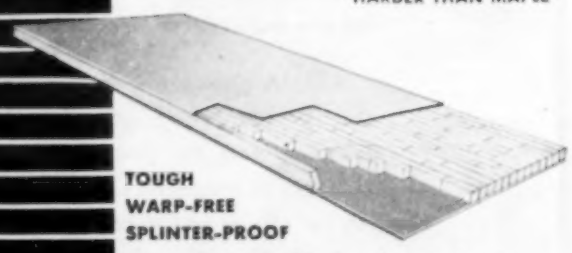
LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The terms "Heliarc" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 8464

NEW **WORKBENCH TOP ... Resinwood**

Shop Top 30% "HARDER THAN MAPLE"



TOUGH
WARP-FREE
SPLINTER-PROOF

For All Industries

ShopTop quality is superior to maple — with up to 50% greater economy. Select kiln-dried cores, bonded under pressure and heat, provide a built-in impact cushion to give longer life. Smooth Resinwood facings resist acid, alkali, oil, and grease. For new or replacement work benches.

Made in any size to meet your requirements.

Available through selected industrial distributors in principal cities or write direct for sample and price list.

QUALITY SINCE 1868 RIMCO 1868 MILLWORK

ROCK ISLAND MILLWORK COMPANY
RESINWOOD DIVISION
Established 1868 Rock Island 3, Illinois

If you write maker identify as IEN - 8465

makes the Solid Arbor obsolete

CHAMPION E-X-P-A-N-D-I-N-G MANDRELS

The expanding sleeve, mounted on tapered arbor, expands automatically to fit the hole. Inserted by hand — no arbor press needed. Always an exact, positive, concentric fit. Locked by a single mallet blow. Unlocked the same way. CHAMPION Expanding Mandrels are used in machine shops around the world. Save time, cut production costs, whether the job calls for machining one piece or a thousand.

Precision Model has expansion range of .010". Available in regular sizes to fit holes from ½" to 3" diam. Holds work to tolerances of .0002" run-out. Guaranteed for precision grinding, turning and milling operations.

Standard Model maintains close tolerances, handles material of any length bore, hard or soft metals — from thin tubes and bushings to heavy castings and forgings. A set of fourteen will fit every hole from ½" to 9½" diam.

CHAMPION *Expanding Mandrels can be made in special shapes and sizes to fit any specifications. Quotations on request. Write for descriptive folder today.*

WESTERN TOOL & MFG. CO., INC.

Our 53rd Year • Dept. 22 • Springfield, Ohio

If you write maker identify as IEN - 8466

Now, for the first time...

Standard Verson Press Brakes

Available from *Stock!*

● Quality-built standard Verson Press Brakes offer the small shop big brake standards of design and construction at modest cost. For the big shop they offer an economical way to avoid tying up big machines on odd jobs. Write for descriptive bulletin.

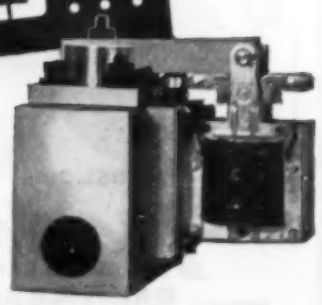
Verson

VERSON ALLSTEEL PRESS CO.

9325 S. Kenwood Ave., Chicago 19, Ill. So. Lamar at Ledbetter Dr., Dallas, Tex.

If you write maker identify as IEN - 8467

High Pressure SOLENOID VALVES...



have working pressures range as high as 3000 psi. Specifically designed for remote push button control of hydraulic systems, as well as for the handling of any non-corrosive fluids. Poppet construction eliminates leakage. Impregnated coils are oil and moisture resistant. Unit can be mounted in any position. Available in 110-220 A.C.

Write for illustrated circular C.

WATERMAN ENGINEERING Company

725 CUSTER AVENUE
EVANSTON, ILLINOIS

If you write maker identify as IEN - 8468

Brazing - Gas fired machine takes small assemblies on a conveyor

Source: YOUNGBERG BROS.
26 Cherry St., Dept. IEN, Meriden, Conn.

Bulletin, "Y-B Brazer"

Production averages 240 to 720 assemblies per hour depending on size, shape and weight with this new Y-B brazing machine. An operator puts the individual assembly parts together with a preform of silver solder. He fluxes the joint and places the assemblies on holding fixtures spaced at three-link intervals along a steel conveyor belt that is chain connected to a driving motor.

The fixtures can be stationary, with reference to the belt, or can be rotated positively as they enter the brazing area served by parallel gas fired burners. Burners are adjustable laterally, vertically and can be rotated to direct their 1-in. flames at the correct angle for given work.

Brazed assemblies issue from the heated area to travel along a section of the belt provided for cooling. As they reach the end, they drop into a water filled container which removes excess flux and cools the finished work.

The machine can be mounted on a bench with air, gas and electrical connections from shop sources. It also can be mounted on floor supports as shown in the illustration. Two models, No. 20 and No. 64, measure 72 and 117 in. in length by 12 in. in height without the legs and 15 in. in width. Burner length is 12 in. on the smaller unit and 42 in. on the larger one. Burner height is adjustable between 2 and 8 in. on the small machine and 2 to 12 in. on the larger one. Maximum width, in lowest position, is 6 in. and in highest position is 10 inches.

Standard speed for the smaller machine is 1½ fpm. The larger machine operates at variable speed in a range from 1.75 to 1. The rotating fixtures measure 3 in. in diameter. There are 26 on the smaller machine and 44 on the larger one. Rotation is through 1¼ or 4½ revolutions while the work is passing through the heated area. List prices for the basic model are $743 and $1,365.

If you write maker identify as IEN - 8469

Meter - Ruggedized design, sealed assembly for panel installation

Source: SIMPSON ELECTRIC CO.
5200 W. Kinzie St., Dept. IEN, Chicago 44, Ill.

Typical unit

The company announces introduction of a new line of sealed ruggedized panel instruments with dc. ranges showing any practical scale from 300 microamperes to 800 milliamperes. Two sizes are 2½ and 3½ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8470

Logan UNIVERSAL COUPLINGS permit "hooking-up" at either end of sections. Not necessary to turn end for end. All ends fit. A Logan feature.

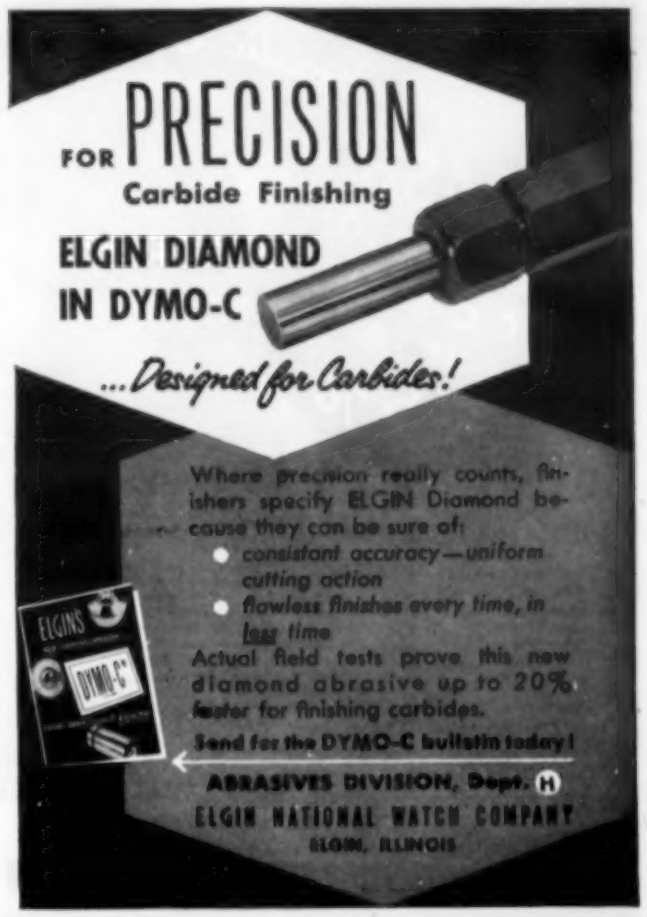
LIGHT WT. . . PORTABLE

Logan Wheel Conveyors are first choice where light-weight, portable conveyors are required. The free-running, ball-bearing wheels need but a minimum of grade for operation. In both Steel and Aluminum construction. Sturdy, dependable. For indoor or outdoor use. Send for literature.

WHEEL Logan Conveyors

LOGAN CO., 276 CABEL ST., LOUISVILLE 6, KY.

If you write maker identify as IEN - 8471



If you write maker identify as IEN - 8472

Looking for a Better Conveyor? Then You Want This Book

If your conveying problem involves cans, bottles, jars, packages, small parts or almost any other small unit, you'll want this new book on Rex TableTop® Chain. The book explains all the advantages of TableTop's simplicity...how it reduces maintenance...speeds production ...helps cut conveying costs.

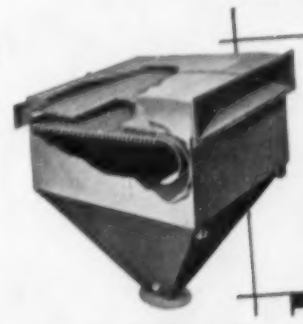
There are also sections on two other great conveying chains—Rex FlexTop® and Baldwin Rex PlateTop®. Just use the coupon to send for your free copy today.

REX® Chain Belt COMPANY OF MILWAUKEE

Chain Belt Company 53-102
4675 W. Greenfield Avenue
Milwaukee 1, Wisconsin
Please send me TableTop Chain Bulletin 53-60.

Name.....
Company.....*Dept*.....
Address.....
City.....*State*.....

If you write maker identify as IEN - 8473



Solves Big Problem for Small Boiler Operators!

Buell 'LR' Collector gets 99% of all 100-mesh and larger cinder discharge. Top efficiency for boilers from 100 to 2000 BHP.

Draft loss so low you can use 'LR' on the smallest natural draft boilers.

Get all the facts—write for 'LR' Bulletin. Buell Engineering Company, Dept. 22-H, 70 Pine Street New York 5, New York.

buell

Engineered Efficiency in DUST COLLECTION

If you write maker identify as IEN - 8474

TRICO Automatic OILERS

SLASH LUBRICATION COSTS UP TO 75%

There's a Type and Style for Most Every Application
- Constant Level
- Gravity Feed
- Wick Feed
- Multiple Feed Solenoid and manual control)
- Oil Cup & Gauge
- Thermal & Bottle
- Large Capacity Gravity Feed

Exorbitant claims? . . . not at all. It's a PROVEN fact that where TRICO Oilers are properly applied, savings are tremendous. Check these "hidden" costs of "trust-to-luck" daily hand-oiling — Costs of labor to apply and frequency of application . . . Lost PRODUCTION TIME . . . Premature wear and parts replacement . . . Shortened equipment life . . . Fire and accident hazards, etc.

WRITE FOR FREE CATALOG
It contains complete details, including dimensional specifications

TRICO FUSE MFG. CO. MILWAUKEE, WIS.

If you write maker identify as IEN - 8475

CHOOSE Sta-Warm

electrically heated

TANKS • KETTLES • POTS

for melting and dispensing

PITCH · TAR · POTTING COMPOUNDS · GLUE · RESINS · COMPOUNDS · WAXES · SYNTHETIC ADHESIVES · THERMO-PLASTICS

You'll find Sta-Warm equipment offers a wide variety of capacities and specifications to meet your production or laboratory needs.

Write for catalogs, or outline your problem to us today and ask for recommendations. No obligation.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 8476

Reduce Tool Handling Time with KELLER BALANCERS

Simplify assembly operations by holding tools in a convenient position over the working area. Bring tools quickly to the work—increase production per man-hour. Reduce tool mistreatment—eliminate damage from dropping.

The Keller Balancer has been redesigned. It has a guide bushing that increases cable life . . . lowers maintenance. It has smoother action . . . requires less effort. Adjustable tension control accurately balances tools up to 20 pounds.

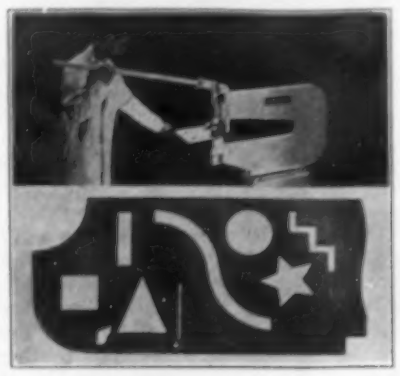
Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
1329 Fulton St.
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 8477

Punching - Hand operated machine rates 5 ton, provides 24 in. throat

Source: NIAGARA MACHINE & TOOL WORKS
683 Northland Ave., Dept. IEN, Buffalo 11, N. Y.



Bulletin 79B

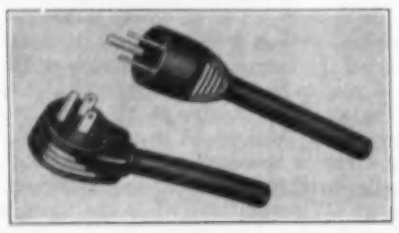
Number 5-24 designates a new hand operated machine that can be equipped optionally as a punch or shear or both. It is supplied with a selection of punches and dies, for simple or intricate holes, for notching, corner trimming, combination trimming and cut-off operations. Narrow die shoes can be used in punching deep leg channels and angles. Wide die shoes are supplied for larger work diameters and for special shaped dies.

Straight lines or intricate shapes can be cut accurately. The machine shears from front to back or from left to right. It will slit sheets in any length down the center of a 48-in. width.

If you write maker identify as IEN - 8478

Connector - Cord attachment caps designed to meet new NEC regulations

Source: CORDS LIMITED DIVISION
Dept. IEN, DeKalb, Ill.

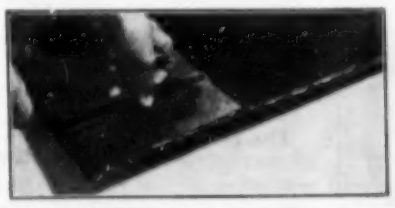


Bulletin C-442

Illustrated are new straight and right angle molded rubber three conductor male attachment caps with parallel blades for 15-amp. 125-volt operation or with tandem blades for 15-amp. 250-volt operation. Wire gage sizes are from 12-3S to 16-3SJ. The ground wire is secured to a contacting pin projecting from the plug end parallel to the blades and the blades themselves have been repositioned according to their rating under the new NEC that is to be effective January 1, 1955. Each assembly in the line is UL approved.

If you write maker identify as IEN - 8479

Ribbons of high tensile steel wire are inserted at intervals to 3 ft. across a new type of rubber conveyor belt developed by B. F. Goodrich Co., 450 S. Main St., Dept. IEN, Akron 11, Ohio. The wires act as barriers against ripping when sharp objects penetrate the belt, become jammed.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8480

A PAID NEWS ADVERTISEMENT BY KANO LABORATORIES

You don't have to be a Monkey—

. . . to loosen frozen bolts on utility poles. The new Aerosol Kroil, which can be squirted with one finger, loosens the most stubborn frozen metal parts . . . FAST. More than 12,000 shops depend on Kroil whenever frozen metal parts threaten to tie up production or waste manhours. In this new package it is the finest rust-busting tool ever . . . shoots a stream 3 ft. yet won't leak. One customer said, "before trying Kroil we broke off every nut (on our heat treat trolleys), since then we have not lost one and have decreased the repairing time from 30 minutes to about 6 minutes per trolley."

KANO KROIL LOOSENS FROZEN METAL PARTS

Use Kroil on all dismantling jobs; for filing, sawing, honing; . . . also keeps air driven tools running freely.

Just try Kroil on a make good basis. Case of 12 Aerosol Kroil 12 ounce cans $21.60 f.o.b. factory or send $2.35 for one can postpaid. If it doesn't perform to suit you, return the empty can for refund.

KANO LABORATORIES 1071 THOMPSON LANE NASHVILLE 11, TENNESSEE

If you write maker identify as IEN - 8481

JEVIN MICRO-DRILL PRESS
FOR VERY SMALL HOLES DOWN TO .002"

Designed to hold small drills in precision collets, thus overcoming the difficulty of making a drill run true as when held in a conventional drill chuck. Absence of a sliding quill guarantees maximum sensitivity with fingertip control. A mounted ⅛" capacity chuck can also be used.

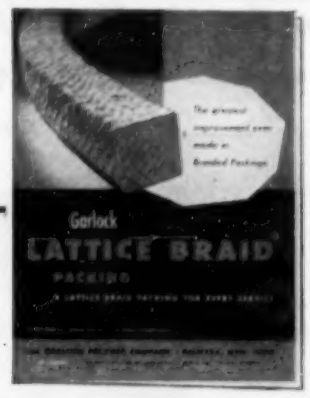
Send for Catalog L describing Micro-Drill Press, full range of collet sizes, accessories and other precision tools

LOUIS LEVIN & SONS, INC., 3610 S. Broadway, Los Angeles 7, Calif.

If you write maker identify as IEN - 8482

JUST OFF THE PRESS!

WRITE FOR YOUR COPY TODAY



This new folder describes in detail GARLOCK'S complete line of

LATTICE BRAID*PACKINGS

Here, in a handy 8-page folder, you will find a Garlock LATTICE BRAID Packing for every service. The folder shows how the unique structural design of Garlock patented LATTICE BRAID Packing gives it much longer life than ordinary braided packing. LATTICE BRAID Packings made of flax, cotton, asbestos, wire-inserted asbestos and "Teflon" are all described in the folder.

*Registered Trademark

Write today for your copy of the new LATTICE BRAID *folder AD-131.*

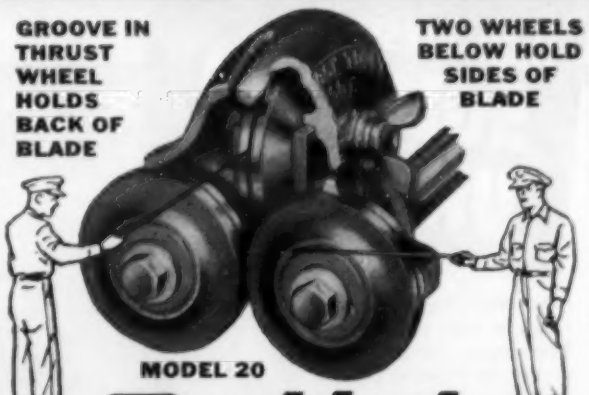
THE GARLOCK PACKING COMPANY
PALMYRA, NEW YORK

In Canada: The Garlock Packing Co. of Canada Ltd., Toronto, Ont.
Branch Offices in Most Principal Cities

GARLOCK

If you write maker identify as IEN - 8483

Sturdy, Strong, Band-Saw Guide



MODEL 20

Paddock BALL-BEARING BAND SAW GUIDES

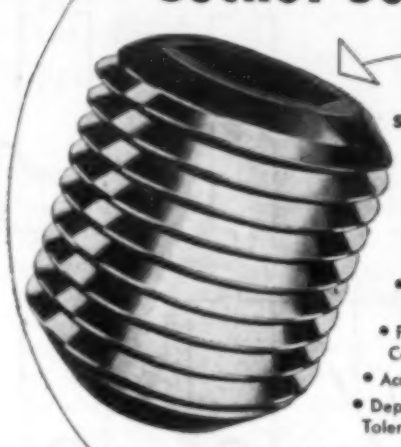
Model 20, shown above, can be installed on machines having 2½" back of blade to guide posts. It's designed to work above or below saw table. Interchangeable ball-bearing wheels give friction free support to blade. Cut out section pictured: shows grooved thrust wheel that holds back of blade. Side wheels and thrust wheel run with blade. Easier and better adjustment for thrust wheels for ⅛" to 1¼" wide blades. Models for large or small machines. Give size, make of machine on which guide will be used. Write for circulars, prices, etc.

SHIPPED ON APPROVAL WHERE VALUE IS QUESTIONED

PADDOCK TOOL COMPANY
Guide Makers Since 1920
1418 Walnut Street Kansas City, Missouri

If you write maker identify as IEN - 8484

P-K GROUND THREAD Socket Set Screws



set new standards for

- Super-Smooth Finish
- Uniform Hardness and Toughness
- Clean Starting Threads
- Faultless Thread Contour
- Accurate Hex Dimensions
- Dependable Class 3 Tolerance

Samples free. Ask your P-K Distributor or write: Parker-Kalon Division, General American Transportation Corporation 200 Varick St., New York 14.

Compare . . . you'll agree IF IT'S P-K . . . IT'S O.K.

PARKER-KALON®
SOCKET SCREWS

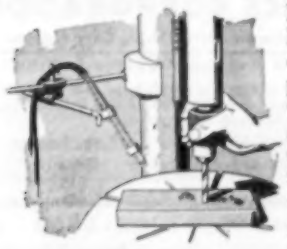
If you write maker identify as IEN - 8485

New ways to reduce costs with CARBOLOY® ALNICO-TYPE permanent magnets

You can speed setups, production and salvage work, by using Carboloy permanent magnets.

Removing small parts from centerless grinder.

These alnico-type magnets are unaffected by heat, moisture and vibration. They offer lasting, permanent energy for innumerable holding, lifting and separating jobs. They cost nothing to operate – eliminate many clamps, vises, jigs, fixtures and other costly units – save you time and money shopwide.



Positioning coolant hose on drill press column.

Send today for your *free* Magnet Idea Literature Kit. It shows you how other shops use Carboloy permanent magnets. Contains full details and diagrams. Send also for Carboloy "You-Try-It" Shop Packages. They may well spark you to even greater savings in your plant. See coupon.

Get the "YOU-TRY-IT" Magnet Assortment

Shop Package No. 1

Shop Package No. 2

Shop Package No. 1 – Contains 48 Carboloy permanent magnets: 8 styles – 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00 (subject to applicable sales and use taxes). Order today.

Shop Package No. 2 – Contains 18 magnets: 4 styles – 2 pairs each; and 1 style–1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00 (subject to applicable sales and use taxes). Order today.

"Carboloy" is the trademark for products of the Carboloy Department of General Electric Company

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Street, Detroit 32, Michigan

☐ Send me free Magnet Idea Literature Kit.
☐ Send me _____ Shop Package No. 1 at $10.00 each.
☐ Send me _____ Shop Package No. 2 at $15.00 each.
☐ Enclosed is check or money order for $_____ ☐ Send C.O.D.

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 8487

Drive - Rubber toothed gear and ring for engine power take-off

Source: TWIN DISC CLUTCH CO.
1310 Preston St., Dept. IEN, Rockford, Ill.

Company offers design assistance

Rubber Block Drive designates a new combination of special toothed wheel, or gear, in which each tooth carries a molded rubber block in involute external contour to mate with a driving ring, precision shaped on a gear cutting machine. The ring bolts directly to an engine flywheel to mesh with the rubber toothed gear in a power take-off. The drive cushions the action and also permits misalignment.

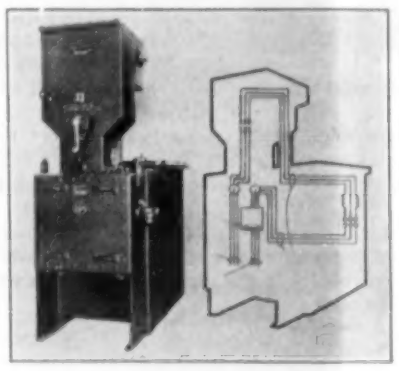
The company is prepared to supply this drive for engines using a 14, 18, 21 or 24-in. Twin Disc friction power take-off. It also is prepared to supply the drive on its Models-E and EH heavy duty clutches in the same four sizes. In the latter design, the driving plates in the clutch carry the blocks.

The drive is standard on the company's own design of torque converters, disconnect fluid power take-offs and on certain models of its marine reverse and reduction gears.

If you write maker identify as IEN - 8488

Motor Control - Oil immersed for use on 2,200 to 5,000 volt motors

Source: ELECTRIC CONTROLLER & MFG. CO.
2738 E. 79th St., Dept. IEN, Cleveland 4, Ohio



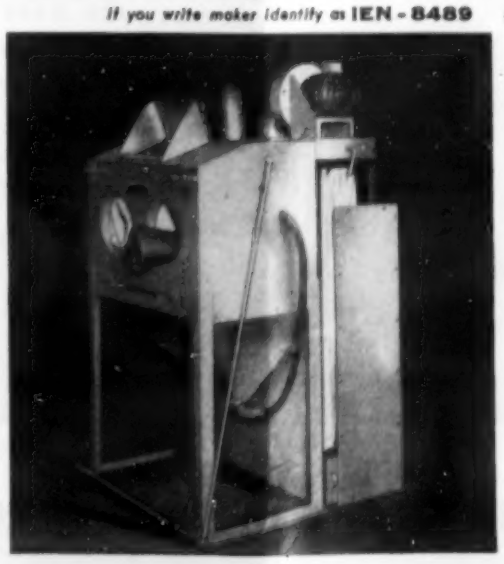
Technical data upon request

The company announces production of a new line of Class I, Group D motor starters for use where hazardous atmospheres and severe corrosive service conditions are encountered. They are particularly suited for use in refineries, on pipe lines, in cement plants, paper mills, chemical processing plants, mines, flour mills. Connection terminals, arcing parts and main line disconnect switches are oil immersed. The immersion also keeps the mechanism lubricated and protects against corrosion.

The equipment is the company's Valimitor type to provide overall short circuit protection. It is suited for use with high inrush motors for frequent starting operations.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8489



HANDY BLAST CLEANING CABINET

Here is a cabinet of many applications. Designed for tool room use, deburring, removing rust and scale, producing matte' finishes, cleaning heat-treat scale. Also used for removal of carbon deposits when used with soft grit abrasives. Many laboratories use this equipment for experimental work, samples, testing, etc. Furnished complete with dust filter, fan and ¼ HP motor. Sanitary. Compact.

Write for Bulletin No. 41

RUEMELIN MFG. CO.
3863 N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.
MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

If you write maker identify as IEN - 8490

FLOCK

TYPICAL APPLICATION — Protects the finish of fishing plugs and tools, deadens rattling noises. Adds richness and color.

Dampens Vibration... Silences Noises...

ADDS BEAUTY, COLOR, SALES APPEAL

Every year more and more product designers find profitable uses for Cellusuede Flock. The fascinating textures of this versatile finish add new vitality, color, and sales appeal to many products. Or, Cellusuede takes on more enduring — even rugged textures for such varied functions as providing a protective cushion, dampening vibration, and silencing noises. Less expensive than fabric, Cellusuede is made principally from cotton, rayon, or hair fibers, and is available in an almost limitless combination of textures and colors to meet your needs.

Free Bulletin, Technical Assistance
Call on Cellusuede for help with any potential application. Unexcelled facilities are available for flocking test samples. Ask for free bulletin describing profitable uses.

A DURABLE PROTECTIVE COATING WITH A THOUSAND USES . . .

- Can be applied to any surface which will support an adhesive film.
- Easy to apply on an individual or production-line basis — by spray, vibration, or electrostatic process.
- Wide range of textures and colors to suit your needs.

CELLUSUEDE PRODUCTS, INC.
520 N. MADISON STREET, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 8491

compare the cost...

...of a completely fabricated Hackney Part like this with the cost of forming, welding and machining operations in your plant. Hackney Parts reach your production line ready for assembly into the finished product—often save money and time for users.

Your engineering department may come up with other advantages, too, when replacing a cumbersome cast, forged or welded pipe part with a Hackney Deep Drawn Shape or Shell—advantages such as lighter weight, greater durability, increased vibration resistance, closer tolerances and smarter appearance. Write for information.

Hackney MILWAUKEE

PRESSED STEEL TANK COMPANY
Manufacturer of Hackney Products
1449 S. 66th St., Milwaukee 14, Wisconsin

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as IEN - 8492

• every sheet and strip of *mar-resistant* Rigid-tex Metal — ferrous or non-ferrous — has the pattern rolled clear through for added strength. scratches, scuffs and dents during fabrication are concealed by exclusive Rigid-tex Metal patterns. added rigidity keeps sheets from buckling, bulging or distorting. and these are just the features your customers want in their products!

• write for your Design Imagineering Folder . . . on company letterheads please. . . . or see Sweets Design File 1a/Ri.

RIGID-tex METALS **RIGIDIZED METALS CORPORATION**
6648 Ohio Street, Buffalo 3, New York

U.S. & Foreign Patents

50 Warehouses and Sales Representatives in all Principal Cities throughout the U.S. & Canada.

If you write maker identify as IEN - 8493

You'll Find Both in PROTO's EXPANDED Line of Torquers

Two NEW plain head "midgets" (¼" and ⅜" drives) and two NEW ¾" drive "giants" bring the total Torquer models offered to 16. "Midgets" are ideal for aircraft parts, instruments, electronic equipment, automatic transmissions, etc., while "giants" are used in heavy industry. Buy the models you need from your PROTO dealer. Send 10¢ for 68-page catalog to

PLOMB TOOL COMPANY
2271U Santa Fe Avenue
Los Angeles 54, Calif.

Why PROTO Torquers Are Superior

- Fastest torquer in the world
- No dials, pointers, scales or other projecting gadgets
- Automatically releases and resets
- Accurate, micrometer-type adjustment
- Trouble-free construction

5490

PROTO TOOLS

Eastern Factory—Jamestown, N.Y.
Canadian Factory—London, Ont.

If you write maker identify as IEN - 8494

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

TO KEEP PRODUCTION UP ...KEEP ACCIDENTS DOWN

Safeguard the worker against hazards and accidents—with the help of

STONEHOUSE SIGNS

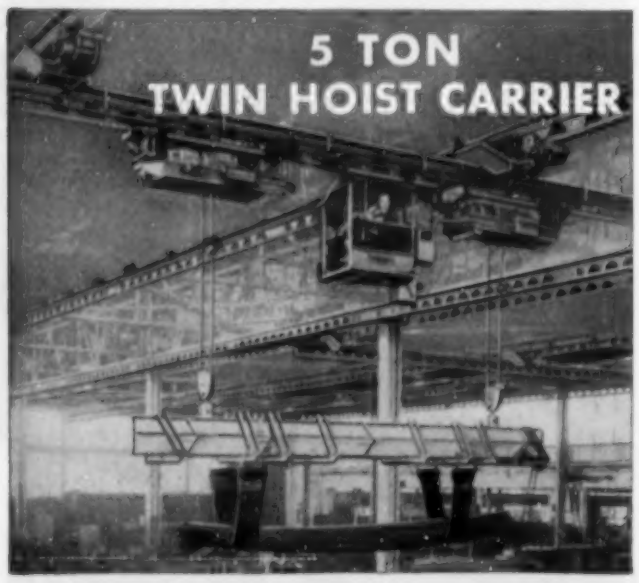
Made in accordance with "American Standards Ass'n Specifications for Accident Prevention Signs"—the only authentic standards.

Write for complete Catalog No. 9, showing hundreds of different stock-worded Accident Prevention signs. It's free on request.

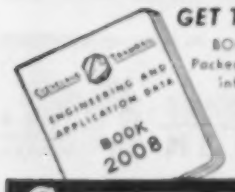
Stonehouse SIGNS, inc. MANUFACTURERS
Stonehouse Building · 842 Larimer · Denver 4 Colo.
"SIGNS SINCE 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN - 8495



This cab-operated carrier operates on two 4-runway transfer bridges, providing full handling coverage for an area 152' x 380'. It handles 5 tons of tubing up to 40 feet long.



GET THIS BOOK! BOOK No. 2008 Packed with valuable information...

For any handling problem — simple or extensive — check with Cleveland Tramrail.

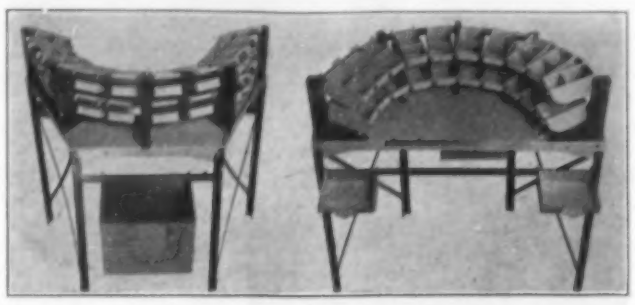
CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4203 East 285th St., Wickliffe, O.

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 8496

Assembling - Small parts boxes support rack and steel work bench

Source: SERVICE PARTS SYSTEMS INC.
13380 E. 9-Mile Road, Dept. IEN, East Detroit, Mich.



Assembly components within reach

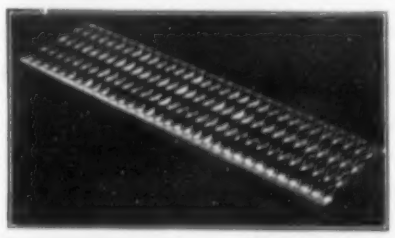
Model 23-SC is a new bench assembly of rack supported boxes, to hold small parts in a convenient semi-circle, and a steel work bench that provides a clear working area measuring 27 in. in width by a little over 13 in. in depth. The bench top stands 32¼ in. above the floor. Overall dimensions are 43 by 22½ inches.

Work pieces can be picked up with either hand. A number of the units can be interlocked to make up a production line. The bench top and the boxes are finished in buff lacquer. The frame is finished in red. List price is $53.75.

If you write maker identify as IEN - 8497

Floors - Single piece grating made by forming stainless steel sheet

Source: GLOBE COMPANY
4000 S. Princeton Ave., Dept. IEN, Chicago 9, Ill.



Made from single sheet

Stainless steel has been added as a material available in the company's Safety Grip-Strut metal grating. It supplements the mild steel and aluminum designs previously described IEN-8157-53. The stainless is 14 gage, Type 316. It is suited for application in locations subject to corrosion. Five sizes measure 4¾ to 18¾ in. in width with 2 to 8 diamond openings. Three channel heights are 1½, 2 and 2½ inches.

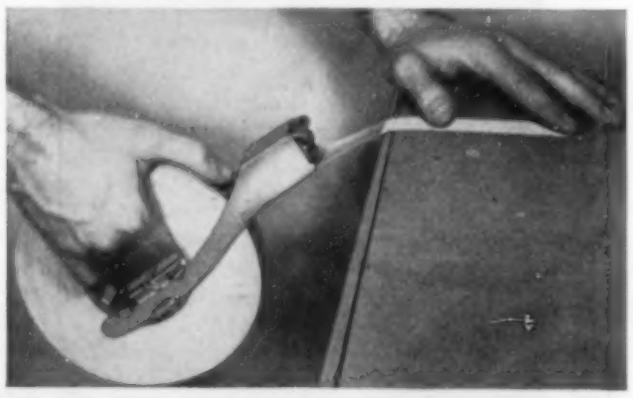
The grating is made by slitting the sheet metal to produce a toothed top outline with alternate openings that face downward. The forming action results in the diamond pattern and in the side reinforcing flanges.

If you write maker identify as IEN - 8498

Peter A. Frasse & Co., 17 Grand St., Dept. IEN, New York 13, N. Y., announces availability of Reynolds Metals aluminum in rods, bars, wire, sheets, plates, tubing and extruded shapes from its warehouses in Lyndhurst, N. J., Philadelphia, Buffalo, Syracuse and Hartford. The aluminum stock augments the company's normal stocks of carbon steel alloys and stainless steels and tubing.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8499



Brainard Strapping Tape

SPEEDS PACKAGING AND REINFORCING

● Streamline your package closing, reinforcing, bundling, holding, and palletizing with Brainard Strapping Tapes—either pressure-sensitive or gummed. Brainard offers a complete line of dispensers, like the hand dispenser shown above, which permits fast tape application, holds rolls up to 8" in diameter and has a patented corrugated cut-off blade. Brainard's complete Strapping System includes steel strapping and strapping tapes—assuring you of unbiased recommendations.

Brainard
STEEL DIVISION
SHARON STEEL CORPORATION

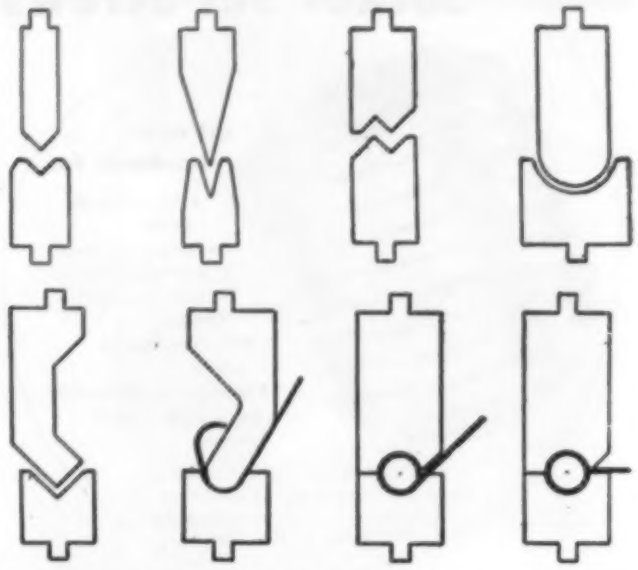
For booklet write:
BRAINARD STEEL DIVISION
Dept. 11-S, Griswold Street
Warren, Ohio

If you write maker identify as IEN - 8500

PRESS BRAKE FORMING DIES

PROMPT DELIVERY

Any Metal—any gage—to fit any make of machine

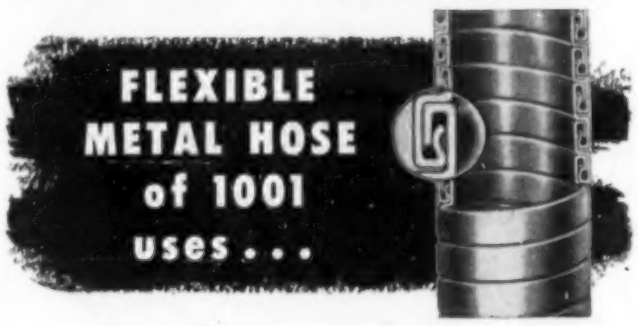


Bulletin, "Rafter Forming Dies," shows and specifies complete line

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street **Belleville 9, N. J.**
COLD ROLL FORMING MACHINES AND GANG SLITTERS

If you write maker identify as IEN - 8501

FLEXON REX-TUBE

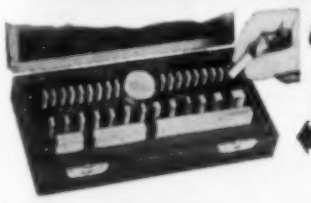


. . . for the practical handling of saturated steam, non-searching liquids or gases—substances such as tar, asphalt and petroleum products. It is also widely used for ducting, tubing and conduits. Rex-Tube absorbs vibration—expansion and contraction—misalignment. It combines the flexibility of hose with the durability of metal. Available in a wide range of sizes with fittings for your needs. Working pressures to 750 psi and temperatures to 1200° F. Write today for more information.

FLEXONICS CORPORATION
Formerly Chicago Metal Hose Corporation
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

If you write maker identify as IEN - 8502

ULTRA-CHEX GAGE BLOCKS



for Every Need!

Supplied in one Superior Accuracy

5 MILLIONTHS ± ACCURACY

34 BLOCK SET.....$125.00 (Shown) Code GADHI Incl. Opt. Parallel

82 BLOCK SET.....$275.00 Code GHEYS In Case

9 BLOCK SET FOR INDIVIDUAL MECHANIC $22.50 Opt. Parallel $5.00 Extra Code GADFO

These Sets will supply the needs of any discriminating shop that must work to gage-block precision.

IMMEDIATE DELIVERY

Write for Illustrated Folder—Code GINVU

"Lustro-Chrome" MICROMETER

Take the GLARE out of Micrometer Reading with the New "Lustro-Chrome" MICROMETER

MEASURE TO 1/10,000th

No. 901 C
0-1" Size with LOCK NUT and RATCHET and 10th Vernier as shown..... $13.25
Code GHAEF

All graduations are well-defined black lines on dull chrome surface for easier and surer reading, even in poor light. Guaranteed accurate within one half of a ten thousandth of an inch.

This tool with TUNGSTEN CARBIDE tipped anvils..... $15.75
Code GHAEF-CA

Drop-forged model with chrome finished micrometer head from $8.25 up.

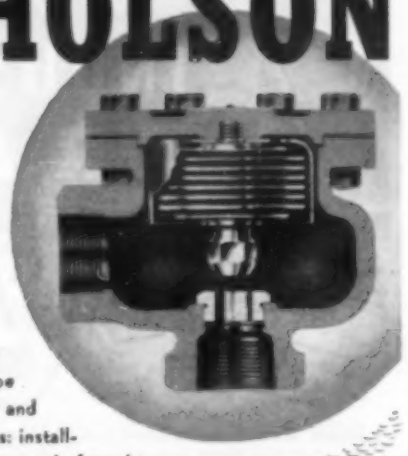
Ask for Micrometer Catalog—Code GINWY

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

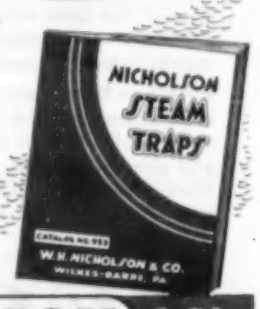
If you write maker identify as IEN - 8503

NICHOLSON

TRAPS for Every Plant Application



Send for Nicholson Catalog 953. This 32-page standard reference on advance-type trapping of steam, air and other mediums contains: installation diagrams, charts and formulae for determining proper trap sizes, and advice on solving specific problems. See why leading plants are increasingly standardizing on Nicholson traps for increased production and minimum maintenance.



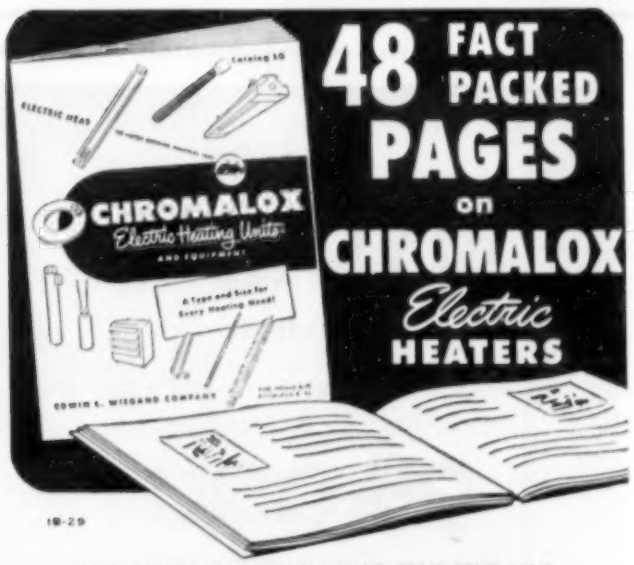
Send for Helpful Booklet

W. H. NICHOLSON & CO.

TRAPS · VALVES · FLOATS

159 OREGON ST., WILKES-BARRE, PA.

If you write maker identify as IEN - 8504



THIS COMPREHENSIVE CATALOG MAY SAVE YOU VALUABLE TIME AND MONEY, HELP IMPROVE PRODUCTION

You'll find an efficient and economical answer to most of your heating needs in Catalog 50. It includes valuable application ideas and heat calculation data you'll find useful in your work. There are more than 15,000 standard Chromalox Units—most of them stocked for immediate application to your heating jobs.

Get your copy NOW from

Industrial Division
EDWIN L. WIEGAND CO.
7505 Thomas Blvd.
Pittsburgh 8, Pa.

See Chromalox Radiant Heaters Advertisement, Page 9

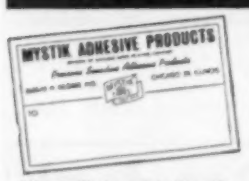
CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 8505

Saves Time and Money

Right on Container Print Label and Address in One Operation



Weber Kustom-Kut Stencils are delivered all ready die cut to print label or form.

Here's a new shipping system that does away with old stencil boards or expensive labels. With Web-O-Print RJ-3 hand printer and Weber custom die-cut stencil, you print facsimile label and shipping address direct to containers in one operation . . . it's fast too, up to 50 per minute. Leaves sharp, water and fade proof print even on rough curved surface. It's easy and no mess.

Type in address or other variable information and you are ready to mark shipment.

Send for FREE Folder and sample Print

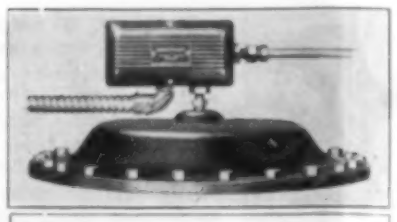
WEBER LABEL AND MARKING SYSTEMS
Div. of Weber Addressing Machine Co.
Mt. Prospect, Ill. Dept. IN-84

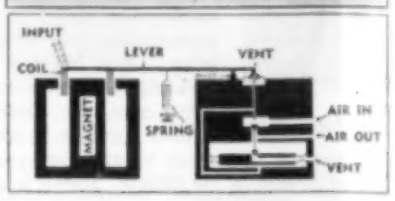
Name _____
Firm _____
Address _____
City _____ State _____

If you write maker identify as IEN - 8506

Transducer - Power relay applies with Autronic process control

Source: SWARTWOUT COMPANY
18511 Euclid Ave., Dept. IEN, Cleveland 12, Ohio





Technical data on request

Lag free operation is provided by this new Type P2R power relay, an electro pneumatic transducer designed to operate with the company's Autronic process control equipment, previously described IEN-2190-52. The new relay takes electrical output from the Autronic controller, or manual control, and converts it to an air loading pressure proportional to the electric current.

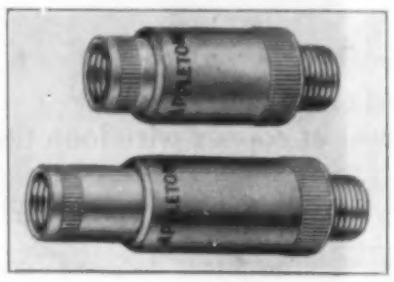
Process variables are converted into a small ac. voltage by the primary element transducer that actuates the main control to produce the dc. input to the relay. Large mechanical power amplification is obtained in the relay which balances a magnetic force against the force produced by the air output pressure from the pneumatic pilot.

The electrical side of the relay consists of a moving coil in a permanent magnet field with adjustment so a 4-milliampere output results in an air loading pressure of 3 lb. per sq. in. and an 8-milliampere current produces 15 pounds. Application can be made in either reverse or direct acting assembly. The illustration shows the relay mounted on the operating diaphragm of a line valve.

If you write maker identify as IEN - 8507

Conduit - Explosion proof union extends and retracts in length

Source: APPLETON ELECTRIC CO.
1713 Wellington Ave., Dept. IEN, Chicago 13, Ill.



Data sheets upon request

Installation is simplified and provision is added for expansion and contraction by this new Series UNY Standard and Long expansion union. The unit is listed by Underwriters' Laboratories for Class I Groups C and D and Class II Groups E, F and G hazardous locations. It is available in three sizes for ½, ¾ and 1-in. conduit. The Standard assembly measures about 2⅞ to 3⅝ in. in overall extended length. It provides ½ to about ⅝ in. of length change. The Long design measures 3⅞ to 4 11/16 in. overall. It provides a length change of 1 to about 1⅝ inches.

Each union is shipped assembled and is not taken apart either during installation or while performing maintenance on a conduit line. Only two tightening operations are required. An internal bronze spring insures positive grounding. Two designs in both the Standard and Long types provide female connection or male connection at one end, as illustrated.

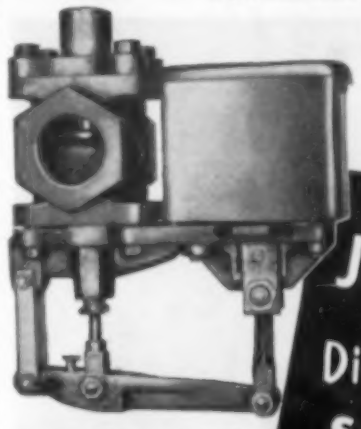
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8508

GREATEST DEVELOPMENT IN WORK GLOVE HISTORY

The same heavy cowhide side split used in work gloves now tanned to a softness never before achieved.

If you write maker identify as IEN - 8509



OUTSTANDING FOR STEAM SERVICE

JOHNSON Direct Operated SOLENOID VALVES

Stainless steel valve and seat. Sizes: ½" to 3". Write for facts.

Job after job, these Johnson Direct Acting Solenoid Valves are proving an ideal answer for service on steam lines. Their design removes the solenoid proper from the heat of the line, permits a leverage system with ample power to open against differential pressures up to 150 lbs. There are no pilot valves or auxiliary pistons, and construction is really heavy duty throughout. You will find their inherent simplicity and instant response will solve a lot of operating problems like no other valve can.

THE JOHNSON CORPORATION
846 Wood St., Three Rivers, Mich.

If you write maker identify as IEN - 8510

161 control steps!

That's what you get in Ward Leonard's 13" Multi-step plate rheostat — what's more, you get 161 steps whether it's a 2 ohm or a 1000 ohm plate.

You get smoother operation and longer life in any W/L rheostat and you take your pick from the most complete line of power rheostats ever offered for industrial and commercial applications.

Write for free data-packed Bulletin 60A. Ward Leonard Electric Co., 33 South St., Mount Vernon, N.Y. 4.12

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS · RELAYS · MOTOR CONTROLS · CHROMASTER

If you write maker identify as IEN - 8511

LEVEL THE LOAD with a TWIN DISC HYDRO-SHEAVE®

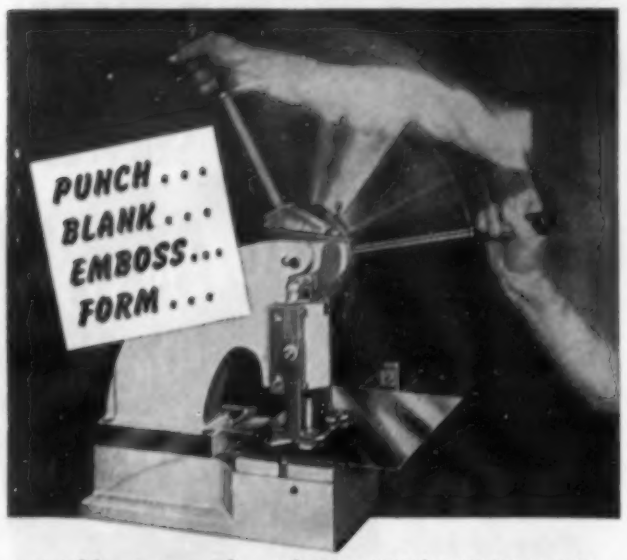
Do you know the simple and inexpensive way to solve starting load problems? By installing a Twin Disc HYDRO-SHEAVE on the output shaft of your electric motor. The motor can come up to maximum torque before picking up the load. Overloads merely cause the hydraulic fluid in the coupling to slip. The motor is protected. Another result is less demand current, sometimes even a smaller motor to do a bigger job. Level the load with a Twin Disc HYDRO-SHEAVE Drive and save money while you save machinery. Ask for Bulletin No. 145-B.

TWIN DISC HYDRO-SHEAVE DRIVES

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin · HYDRAULIC DIVISION, Rockford, Illinois

BRANCHES: CLEVELAND · DALLAS · DETROIT · LOS ANGELES · NEWARK · NEW ORLEANS · SEATTLE · TULSA

If you write maker identify as IEN - 8512



Quickly, Accurately with DI-ACRO* PUNCH PRESS

Deep throats—6 and 12 inches—of Di-Acro Punch Presses make them ideal for many operations impossible to perform on most bench presses.

Holes of various shapes and sizes—as large as 4" in diameter in 16 gauge steel—can be punched. Rated capacity, 4 tons. Also power models.

A wide variety of readily interchangeable punch press accessories are available for both production and experimental work. Punches are offered in round, square, rectangular and oval shapes.

*pronounced Die-ack-ro

SEND FOR 32-PAGE CATALOG
Creators of "Die-Less Duplicating"

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
318 8th AVE. • LAKE CITY, MINN.

If you write maker identify as IEN - 8513

CUT COSTS . . . FASTEN "ON THE DOUBLE" with the *Chicago* "214" DOUBLE RIVET SETTER

The "214" automatically feeds, inserts and clinches two rivets at a time . . . with speed that may mean a big saving in your fastening costs.

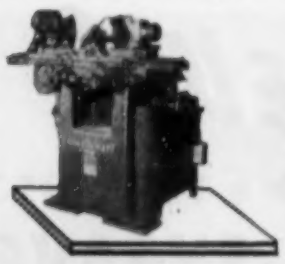
14" throat makes large assemblies easy to handle. For up to 9/64" diameter steel tubular rivets—lengths to 3/8". Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to its versatility.

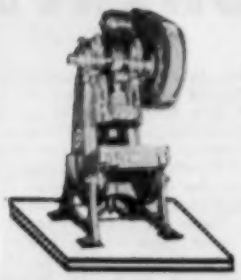
Ask us how the "214" can help you cut costs. Send a sample of your problem assembly (or blueprint) for a Free fastening analysis.

FREE CATALOG
contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as IEN - 8514





For Longer Machine Life Use **UNISORB®** Mountings

Eliminate 60%-85% of transmitted machine vibration, reduce machine maintenance and eliminate floor drilling — by mounting your machines on UNISORB.

No bolts, no lag screws when you use UNISORB pads with our special cement. Or, you can use UNISORB pads precoated with adhesive when mounting machines that do not require shimming.

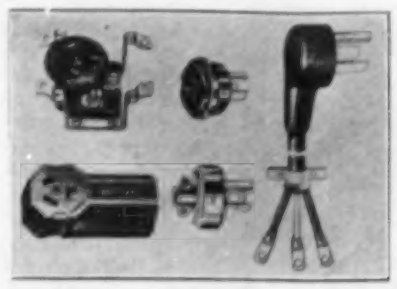
"Why It Pays To Anchor Your Machines With UNISORB" tells the entire story about this modern way to reduce noise and vibration. Ask for your copy. No obligation.

the **FELTERS** company
208 South Street
Boston 11, Massachusetts
WRITE FOR YOUR COPY OF THIS INTERESTING BOOK

If you write maker identify as IEN - 8515

Connectors - Receptacles, caps, cord sets for three wire circuits

Source: PASS & SEYMOUR INC.
1307 Milton Ave., Dept. IEN, Syracuse 9, N. Y.



Polarized

Rating is 30 amp. for this new assembly of receptacle, plug cap and cord sets. The line includes No. 3836 black surface receptacle, No. 3836-W white surface receptacle, No. 3835 flush receptacle, No. 9331 plastic cap, No. 9337 and 9338 armored cord grip caps, No. 9339 rubber cord set in 36, 48 and 60-in. length. The surface and flush receptacles are equipped with "lay-in" type pressure terminals. There are no loose parts to be handled or misplaced.

If you write maker identify as IEN - 8516

Carbide Parts - Specified shapes and sizes, held to close tolerances

Source: CARBIDIE INCORPORATED
27 Hillview Ave., Dept. IEN, Latrobe, Pa.

Technical data upon request

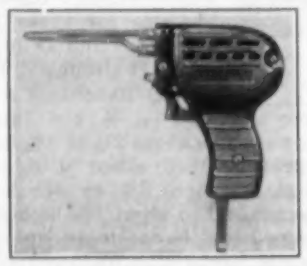
The company announces installation of facilities to produce specified preformed carbide sections to close tolerances for dimensional accuracy and to firm delivery dates. The equipment is set up in air conditioned surroundings. Quality controls are maintained over production. Delivery dates can be guaranteed.

The carbide is available in five grades characterized by hardness, ability to stand up under abrasive conditions, combination of strength and hardness, sufficient strength to withstand medium shock and hardness to provide good service under abrasive conditions. The fifth material is characterized by high strength and ability to withstand heavy shock while retaining sufficient hardness to resist wear.

If you write maker identify as IEN - 8517

Soldering - Electric iron applies heat at copper wire loop tip

Source: WEN PRODUCTS CO.
5808 Northwest Highway, Dept. IEN, Chicago 31, Ill.



About $8

Quick-Hot designates this new Model 199 electric iron. It weighs 1½ pounds, operates on 110-volt 60-cycle ac. It brings its wire tip up to soldering heat in a little under 3 sec. after depressing the trigger. It remains hot as long as the trigger is held down. It cools when the trigger is released. A spot light is located beneath the tip extension to illuminate it and the work. The housing is made of plastic. It is shock and heat resistant.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8518

Bulletin 705 Reversing Switches

- Contactors mechanically interlocked
- Silver-alloy contacts need no cleaning

This complete line of switches provides reliable across-the-line starting and reversing of polyphase squirrel-cage and slip-ring motors, as well as certain types of single-phase motors used on machine tools and other industrial equipment. May also be used in motor plugging operations. Write for descriptive bulletin. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin.

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

If you write maker identify as IEN - 8519

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE8.

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 8520

LIKE AN **ATOMIC** EXPLOSION

JUST 1/32" FAUCET LEAK MUSHROOMS INTO ATOMIC WASTE OF APPROXIMATELY

95,000

GALLONS OF WATER YEARLY!

Cost of wasted water @ $1.90 per M. cu. feet is $24.14. If the leak is in a hot water faucet then fuel cost for heating this wasted water will be: $88.91 if coal (9,879 lbs.)†; $91.02 if oil (792 gals.)†; $84.41 if gas (84,411 cu. ft.)†. These figures authenticated Hackensack Water Co.* and American Gas Association†.*

you can stop this needless waste now with Pat'd

'SEXAUER' "EASY-TITE" Faucet Washers

THE ONLY WASHERS BUILT LIKE A TIRE WITH FIBERGLAS RE-ENFORCEMENT

Fiberglas, with a melting point 1200° Fahrenheit, is unaffected by destructive heat of modern superheat water systems; has a tensile strength of 460 pounds per square inch; is non-absorbent and resists all chemicals.

'Sexauer' "Easy-Tites" outwear ordinary washers 6 to 1! . . . Now available with a greatly improved special duPont COMPOUND which adds substantially to longer, trouble-free washer service. This COMPOUND keeps washer from going to pieces under extreme hot water, withstands impurities and has superior tensile strength. 'Sexauer' "Easy-Tites" won't spread, split or "mush-out." They outlast all other washers by 6 to 1; save labor on 5 REPEAT REPAIRS, water and fuel and prolong fixture life.

Send for your

Free Catalog!

For water savings, lower maintenance and fuel costs, write for new Edition H. 'Sexauer' "Easy-Tite" washers just one in over 3,000 TRIPLE WEAR plumbing repair parts and tools. It's today's accepted guide for purchasing and maintenance men in thousands of PLANTS, INSTITUTIONS, AND GOVERNMENT AGENCIES that rely on 'Sexauer' repair materials.

'Sexauer' Maintenance Engineer at your service

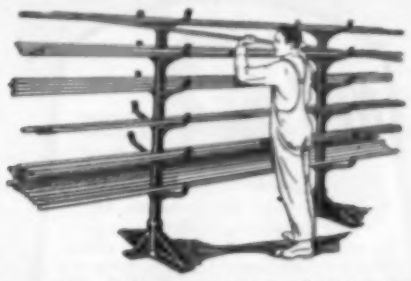
There's a 'SEXAUER' TECHNICIAN within your quick call who offers a special SURVEY SERVICE that sets up schedule of exact replacement parts for your plumbing regardless of make or age. A postcard will bring him and your NEW catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K84
2503-05 Third Avenue, New York 51 *as advertised in THE SATURDAY EVENING POST*

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 8522

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 8523

Only

ANACONDA TYPE TW

has new non-deteriorating "slipper" compound

- no pulling compound's necessary
- makes rewiring easier
- makes it easier to fish
- speeds work

For full information, see your Anaconda Sales Office or Distributor. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.*

the right cable for the job

ANACONDA® WIRE AND CABLE

If you write maker identify as IEN - 8524

This Abrasive Belt Grinder

increased production 200%!

● Time and time again, in hundreds of plants, Engelberg BG8 Abrasive-Belt Grinders have greatly speeded up operations previously performed on lathes, milling machines and ordinary grinders.

For example, the rim of the metal box shown above was originally milled for a close-fitting, watertight cap at the rate of 33 per hr. Output with a BG8 Grinder is now 99 per hr. This is only one of the documented case histories described in our free Abrasive-Belt Grinder booklet. Send for your copy today. Better yet, send samples of your machined pieces for our analysis. No obligation.

ENGELBERG

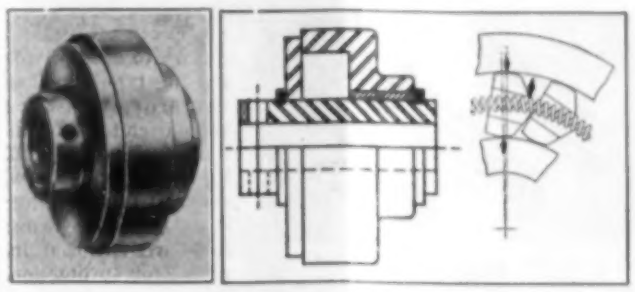
THE ENGELBERG HULLER CO., INC.
148 Solvay Street
Syracuse, N. Y.

Manufacturers of Porter-Cable Abrasive Belt Grinders

If you write maker identify as IEN - 8525

Drive - Over-running clutch, also for indexing and back stopping

Source: FORMSPRAG COMPANY
23601 Hoover Road, Dept. IEN, Van Dyke, Mich.



Engages and releases instantly

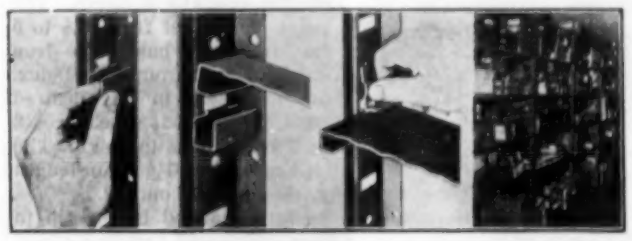
Type FS-02 and FS-04 are new miniature units in the company's line of over-running clutches, previously described IEN-6597-53. Type FS-02 has a standard ¼-in. bore and measures 1¾ in. in overall diameter. Length is $1\frac{1}{16}$ inch. Type FS-04 is available with ⅜ or ½-in. bore. It measures 1⅝ in. in diameter by 1⅛ in. in length. The smallest unit is rated at 50 inch pounds. The other two rate 200 inch pounds. Maximum continuous over-running speed, for either the inner or the outer member, is 2,400 rpm. Initial drag is 4 or 6 ounce inches. Drag with the outer race over-running is 1 or 3 ounce inches.

Provision has been made to mount components such as gears, cams, levers by press fitting them on the hardened and ground hub of the outer race. The inner race is provided with a drilled hole and Roll-Pin for connection to the shaft. The clutch is greased for life and is suited for operation in a temperature range between minus 50 and plus 200 deg. F. It can be specified for either right or left hand rotation.

If you write maker identify as IEN - 8526

Storing - Sectional shelving, self-supporting, 36 and 42 in. widths

Source: BORROUGHS MFG. COMPANY
3002 N. Burdick St., Dept. IEN, Kalamazoo, Mich.



Illustrated catalog upon request

Shaped steel uprights take shelf supporting clips at 3-in. intervals in this new Unitized Flexi steel shelving. The formed steel shelves tilt into position on the clips. Locking clips are pressed into place above them to hold them in place. A top piece is bolted at the upper ends of the uprights.

Two widths are 36 and 42 inches. Four depths are 9, 12, 18 and 24 inches. Four heights range from 39 to 123 inches. Available accessory parts include closed ends and backs, sloping shelves, ledge tops, bin fronts, shelf dividers, base strips, back sway braces, side sway braces, gusset sway braces, shelf boxes, box guides, box partitions, side shelf supports, shelf reinforcement angles and channels, shelf label holders, doors, locks and foot plates.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8527

A PAID NEWS ADVERTISEMENT BY SEATING, INC.

CAFETERIA SEATING . . . rolling, folding table with benches saves space and time

SICO "B-Y"

Sico "B-Y" is a rolling, folding table and bench service that will seat up to 16 adults. Manufactured by Seating, Inc., Minneapolis, the table's low cost is increased by a gain in seats per square foot of area. Uniformity of table and seat positioning makes it ideal for use in multiple-purpose rooms and cafeterias.

Relatively light in weight (shipping weight only 290 lbs.), the Sico "B-Y" table is strongly constructed of arc-welded structural steel, zinc-lustron plated. The chassis is mounted on four "4" rubber casters and designed to allow ample seating space and knee room. Benches are easily detachable.

"Floating Fold," a special design feature, is a torsion spring counter-balanced that protects the operator from "finger-pinching" and strain. Only 7 lbs. pressure is necessary to manipulate the table linkage.

The table top, 27" from the floor, is of ¾" plywood, urea bonded with hardwood facing, and has a plastic laminated-bonded surface that resists cuts, strains and abrasions. Benches are of vertical grain fir. Table top area is 30 sq. ft.; table length (unfolded) is 12 ft.; width, including benches, is 4 ft., 2¾".

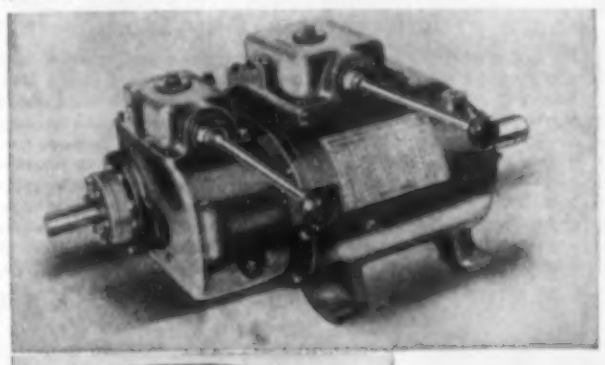
For literature and price information, write Seating, Inc., 4045 PILLSBURY AVE. S., MINNEAPOLIS 19, MINNESOTA

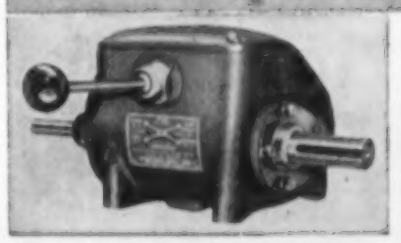
If you write maker identify as IEN - 8528

WESTERN "SUPER" *with* 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. capacity 50 H.P.

in geometric progression of 1.29 (total reduction of 6:1)





(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type.

Ratios—1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.

up to 100 h.p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Mixers, Ball Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS

WESTERN MANUFACTURING CO., 5455 SCOTTEN, DETROIT, MICHIGAN

If you write maker identify as IEN - 8529

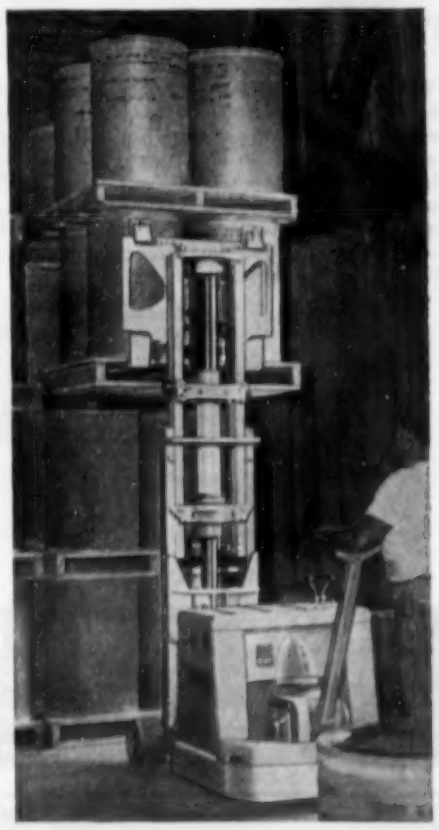
NEW YALE WORKSAVER IS BETTER THAN EVER

•

NEW ECONOMY

NEW EFFICIENCY

NEW SAFETY



Shown here is a Yale Worksaver stacking heavy containers ▶

Look at the features now added to this popular High-Lift Truck

Lift . . . increased 10" with no increase in overall height. **Counterweight** . . . redesigned for greater safety. **Contactors** . . . nylon-covered contactors in commutator are safer, more efficient. **Time Delay** . . . mechanical time delay in 2nd speed gives smoother acceleration. **Drive Tire** . . . new type drive tire cuts change-over time 60% . . . provides greater stability, longer life. Acquire your Yale Worksaver under flexible "3-Way-Finance-Plan" tailored to your precise needs.

YALE*

INDUSTRIAL LIFT TRUCKS AND HOISTS

*Reg. U. S. Pat. Off.

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 368
11000 Roosevelt Blvd., Phila. 15, Penna.
Please send information on new Yale Worksaver

Company_____
Name_____ Title_____
Street_____ City_____ State_____

In Canada write: The Yale & Towne Manufacturing Company St. Catharines, Ontario, Canada

Gas, Electric, Diesel & LP-Gas Industrial Trucks
Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

If you write maker identify as IEN - 8531

Rolling Steel Doors

More Practical from Any Standpoint!

No matter how you look at it, no other type of door meets present day requirements as fully as a good power operated Rolling Steel Door. For motor freight loading docks, and other truck and railroad openings in industrial and commercial buildings, these quick opening, quick closing Rolling Steel Doors offer more desirable features than any other type of door. Their vertical roll-up action saves valuable space—there are no overhead tracks or other obstructions to interfere with crane handling adjacent to door openings. All metal construction of Rolling Steel Doors provides permanence, greater protection against intrusion and fire, and it assures you a lifetime of trouble-free service. For information write for Catalog No. G-54.

THE R. C. MAHON COMPANY

Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 8532

WEBB

hand pushed TROLLEYS

Webb Hand Pushed Trolleys are sturdily built for long life and minimum maintenance. Hardened steel wheels equipped with retainer type ball bearings assure long wearing properties and ease of operation. Triple labyrinth seals keep lubricant in and dirt out. Side guide rollers effectively eliminate binding and excessive wear, especially when moving loads around curves. For simple, inexpensive and easy handling of materials, use Webb Hand Pushed Trolleys.

P-2530 TROLLEY

½ Ton Capacity

4" to 12" I-BEAM

Write for Bulletin No. 453:

JERVIS B. WEBB CO.

Conveyor Engineers and Manufacturers

8915 ALPINE AVE. • DETROIT 4, MICH.

Offices In Principal Cities

If you write maker identify as IEN - 8533

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.

DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.

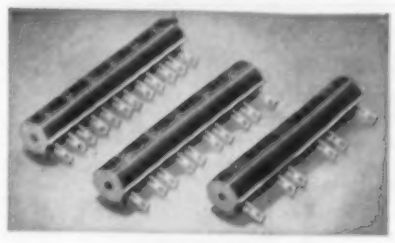
401 Main Street

ANN ARBOR, MICH.

If you write maker identify as IEN - 8534

Resistor - Grouped assemblies of wire wound encapsulated elements

Source: OHMITE MFG. COMPANY
3664 Howard St., Dept. IEN, Skokie, Ill.



Bulletin 145

Two to six individual lug type Riteohm resistors are arranged end to end in a one-piece molded body in this new grouped type resistor assembly. The resistors are enclosed in resin for protection against mechanical damage and changes in ambient conditions. Coefficient of expansion of the resin is essentially the same as for the other materials in the unit. Length ranges to about 3 inches. Individual units in the assembly are available in ¼, ½ and 1-watt ratings at 125 deg. C. ambient temperature. Resistance value is to 1,950,000 ohms. Tolerance can be specified within 0.1 per cent.

Individual resistors consist of enameled alloy resistance wire, pie-wound non-inductively on rigid Steatite bobbins. The resistance wire is welded to the terminal by the company's patented process for permanently stable electrical connection.

If you write maker identify as IEN - 8535

Soldering - Electric iron is mounted adjustably on a fixed base

Source: VARI CORPORATION
619 Fourth Ave. S., Dept. IEN, Minneapolis 15, Minn.

List price is $7.75

Standiron Model F is a new swivel assembly of electric soldering iron and mounting base to position the iron at a desired angle and thus free both of the operator's hands. The point can be set from 1½ to 5 in. above the base. The iron can be tilted through a 180-deg. arc and held in any desired position. The base measures 3 by 4 in. by 4 in. in height. The iron measures 5½ in. in length over the tip and barrel assembly. Weight is 17 ounces.

Four heating elements can be interchanged in the tip to provide temperatures ranging from 550 to 910 deg. F. Ratings are 25 to 75 watts.

If you write maker identify as IEN - 8536

General Electric Co., Electronics Park, Dept. IEN, Syracuse 1, N. Y., announces its readiness to supply color TV equipment for closed circuit use in industrial installations. The picture is "piped" from the TV camera through coaxial lines or over microwave relays to home type receivers or large screen TV projectors. Equipment includes the color camera, a camera control console, a remote control unit for focusing angulation and lens selection, a rack mounted power supply to provide a regular source for dc. and a receiver. All of the equipment, except the camera, can be located remote from the scene being televised.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8537

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine Works,** 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 8538

CESCO RIGHT... before your Eyes!

NEW

Approved by Bureau of Mines

Organic Vapor Respirator No. 99

• New CESCO twin 85 cc absorbent cartridge respirator has positive acting inhale-exhale valves which prevent rebreathing or exhausting through cartridges. Valves replaced without tools. Cartridges replaced by unscrewing retaining caps. B of M approval No. 2307.

Converts to Dust Respirator No. 96

• Replace vapor cartridges with CESCO filter pads to make No. 96 Dust Respirator. Treated wool-felt filters use entire frontal surface, provide maximum efficiency, little breathing resistance. B of M approval No. 2167.

Dual Purpose Saves Money

• CESCO Respirators have contoured facepiece for snug, comfortable, leak-proof fit. You buy only one respirator and elements as desired.

Send TODAY for CESCO literature

CHICAGO EYE SHIELD COMPANY • 2326 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

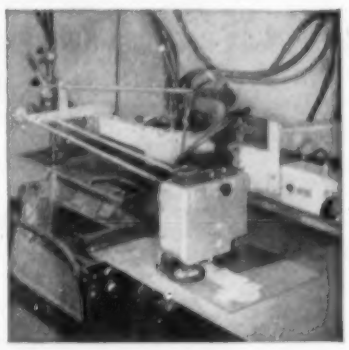
OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write maker identify as IEN - 8539

SIMPLIFY Your Shape-Cutting Jobs with the... OXWELD Automatic Tracer

Trade-Mark

- Positive templet contact... electronic steering control ... maximum tracing accuracy
- Templets are easy to make, low-cost
- No kerf allowance required in templet
- Dynamic braking prevents overruns
- Local or remote controls ... simple to operate



With an OXWELD Automatic Tracer to guide your oxygen-cutting machine, you need never forego the advantages of templet tracing because of time or cost. Just cut actual size templets out of thin plastic sheet with scissors—that's all! Tracer follows practically any templet shape within extremely close tolerances. Drive action is smooth and steady with both single- and multiple-blowpipe setups. Write today for free booklet F-3086.

LINDE AIR PRODUCTS COMPANY

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street UCC New York 17, N. Y.

Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The term "Oxweld" is a registered trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 8540

The NEW SYNCRO '900' POWER SANDER

Loaded with Outstanding Features . . . . including a RIVERSIDE Power Cord!

UL Listed

The new Syncro '900' sander is rugged enough for industrial use—priced for the "do-it-yourself" man. It will outperform and outlast virtually any other sander, according to Syncro Corp., Oxford, Mich.

The Riverside power cord reflects the high quality of this tool. Extra finely stranded wire is protected by a specially developed natural rubber compound. A molded-on strain relief and grommet prevent kinking or damage in hard use. We also furnish the slide switch illustrated.

Specify Riverside components for your product, too! We design and manufacture cords, harnesses and other electrical specialties to your requirements . . . deliver them to your schedule. Send samples or print for recommendations. No obligation.

Riverside Manufacturing AND ELECTRICAL SUPPLY COMPANY

10215 Michigan Avenue • Dearborn, Michigan • Phone Tiffany 6-6800

WIRING HARNESSES AND ASSEMBLIES • CORD SETS • HEATER AND EXTENSION CORDS • ELECTRICAL SWITCHES • RELAYS • MOLDED RUBBER PRODUCTS

If you write maker identify as IEN - 8541

TURN PIPE DREAMS INTO PIPE BENDS

Pipe, tube and structural bending is now simplified with a PEDRICK PRODUCTION BENDER. Heretofore difficult bends, such as offsets and off-plane bends, can now be made in production quantities at an amazingly low cost. ALL PEDRICK PRODUCTION BENDERS are complete with motor, and are equipped with automatic duplicate bending relays.

Write for Descriptive Folder. Dept. 7
Prices start as low as $1575.00

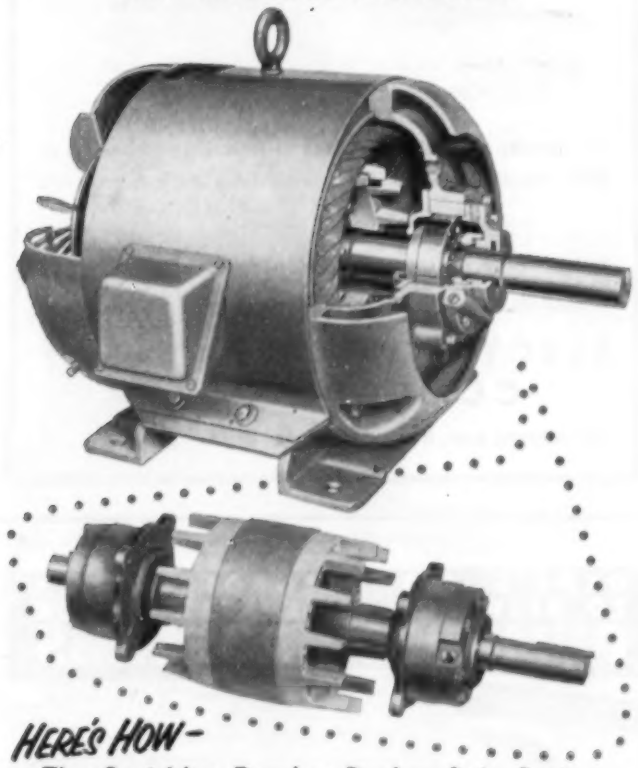
(Motor and all Electrical Equipment included)

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St. Philadelphia 40, Pa.

If you write maker identify as IEN - 8542

SAVE maintenance dollars

with Wagner Fan-Cooled Industrial Motors



HERE'S HOW—
The Cartridge Bearing Design Cuts Costs:

1 **Bearings are protected at all times.** The Wagner design encloses bearings in a sealed cartridge which remains intact as part of the rotor shaft even when the motor is disassembled. Labyrinth seals completely enclose the bearing housing to prevent the entrance of water, dirt and other foreign material.

2 **Wagner Bearings can be relubricated.** When lubrication is necessary, readily accessible lubrication openings permit addition of grease or a complete relubrication.

3 **Wagner Bearings run longer between grease periods.** A cooling stream of air is deflected around the bearing housing so bearings run cooler and longer between maintenance periods. Grease life is prolonged.

This cartridge bearing design is a feature of the entire Wagner line of totally enclosed fan-cooled motors. They are available with steel or cast-iron frames in ratings up to 250 hp.

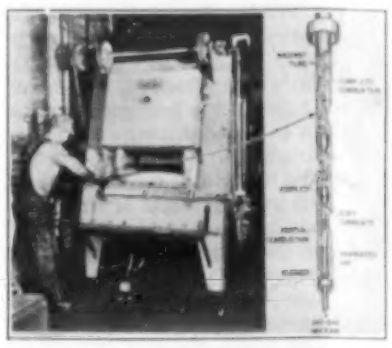
For complete information—call nearest of our 32 branch offices, or write for Bulletins MU-132 and MU-196.

Wagner Electric Corporation EST. 1891
6414 PLYMOUTH AVENUE ST. LOUIS 14, MO.
MS4-16A
ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 8544

Heat Treating - Gas fired furnace employs radiant tubes as heat source

Source: LINDBERG ENGINEERING CO.
2450 W. Hubbard St., Dept. IEN, Chicago 12, Ill.



For scale free work

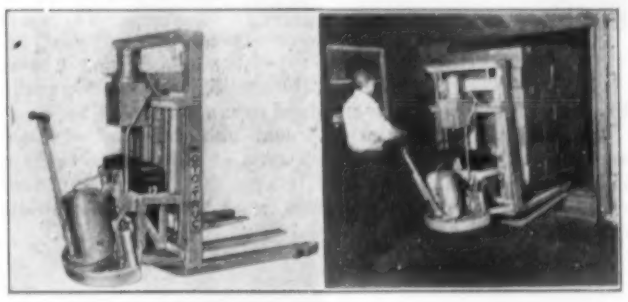
Thin wall tubes made of Inconel are suspended along the sides of the heating chamber in this new toolroom furnace. They are fired through the bottom with a mixture of gas and a relatively small amount of air, insufficient for complete combustion. Aspirated air is drawn in around the central core. This air, moving upward with the air-gas stream in the center, strikes dimple indentations in the tube wall. They set up eddy currents to mix some of the air at each dimple point with some of the air-gas mixture. The result is uniform combustion for the length of the tube with combustion complete at the point where the burned gases leave the tube at the top.

The furnace is assembled in a steel shell reinforced with structural members and continuously welded so it is gas tight. A door slides up and down on the sloping front. It is operated by foot pedals and a pneumatic cylinder. A gas curtain extends across the door. It ignites when the door is raised to prevent air inlet while work is being placed or removed. It shuts off when the door is closed. Maximum operating temperature is 1,850 deg. F. The furnace itself is available to specification for door opening and chamber dimensions. The company is prepared to supply its Hyen endothermic atmosphere generator to serve the furnace.

If you write maker identify as IEN - 8545

Truck - Frame lift attachment provides clearance under outriggers

Source: MOTO-TRUC COMPANY
1987 E. 59th St., Dept. IEN, Cleveland 3, Ohio



To clear a ramp

The company's line of outrigger type Hi-Lift stackers is now available with a hydraulic pump and ram to raise the truck frame and the heel of the outriggers, with reference to the power drive assembly, so the outriggers will clear a floor obstruction, such as a ramp placed at an angle. The new assembly is known as the "Jack Knife". It permits use of the stacking truck on other than level surfaces. It is optional on the company's new trucks.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8546

HERE'S IMPORTANT GEAR NEWS!

See how you can get increased gear life and greater capacity in less space . . . with the hardest, toughest, most accurate industrial gears made . . . and reduce costs at the same time!

Get More

Send for this free folder now!
FOOTE BROS. GEAR AND MACHINE CORPORATION
4545 S. Western Blvd., Chicago 9, Ill.
Dept. AD
FOOTE BROS.

If you write maker identify as IEN - 8547

Better Welding

Heat... up & down slope

Improved non-synchronous performance with Square D's NEW SLOPE CONTROL

BETTER AND MORE PROJECTION WELDS through more uniform distribution of welding current.

PERMITS WELDING NON-FERROUS METALS. Reduced "spitting" at electrodes improves appearance of aluminum and other non-ferrous welds—extends electrode life.

DESIGN FEATURES

Matched Enclosures. Slope Control enclosure matches Square D Non-Synchronous Welder Controller (Nema N2), shown at right. Also matches individual Square D welding timer or contactor enclosures.

Simplified Circuit, standard components, and heavy-duty construction.

Write for Bulletin 8990 EWG. Address Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin.

SQUARE D COMPANY

If you write maker identify as IEN - 8548

FEWER REPLACEMENTS · LONGER SERVICE LIFE

JOB-PROVED MAINTENANCE TIPS show you how others cut costs with neoprene, Du Pont's chemical rubber—in every issue of the free "NEOPRENE NOTEBOOK"

Mail the reader-service coupon today for your free subscription.

DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

NEOPRENE
The rubber made by Du Pont since 1932

If you write maker identify as IEN - 8549

write for your copy!

Bulletin IE-1074, Okonite's complete publication on construction and installation of self-supporting aerial cables, is available on request. Contained in its 52 pages are current-carrying capacities, construction dimensions, splicing and terminating instructions, tension and sag data, etc. Write for your copy today. The Okonite Company, Passaic, N. J.

OKONITE insulated cables
2572

If you write maker identify as IEN - 8550

A Gear Motor for SMALL APPLICATIONS

Our line of small induction motors is designed for applications where small power can be converted to considerable torque at slow output shaft speed. Hundreds of thousands are in use today for operating relays, vending, amusement, coin operated machines, motion displays, combination rotisserie and broilers, etc.

These motors are made in three basic sizes—speeds from 1 to 200 r.p.m. with proportional torque from 5 to 500 in. ounces. Write today for descriptive information, prices and data sheet.

MotoRESEARCH COMPANY
1600 JUNCTION AVENUE
RACINE, WISCONSIN

Designers and Manufacturers of
SPECIAL INDUCTION MOTORS

If you write maker identify as IEN - 8551

A GRINDING AND POLISHING UNIT!

As shown here, the 6-72 Vonnegut Abrasive Belt Unit is set up as a *lathe attachment* for cylindrical grinding and polishing. The same basic unit can be used as a floor stand and also as a *swing machine.* But that's not all—it has proved its value as a grinding and polishing unit for special machines, and as an attachment for other machines. There is the possibility that it can be used for an entirely new application in *your* plant. If you find that possibility, write us about it—we'll be glad to help you work out the details. Send for Bulletin No. 62.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U. S. A.

If you write maker identify as IEN - 8552

. . . and Carpenter Stainless Tubing made the difference.

For this tough flaring job two brands of stainless tubing were tried with 50% rejects. After switching to Carpenter *rejects dropped to 1%.*

GET THESE NEW FACTS!

Just off the press is the new Carpenter Condensed Data File. Packed with facts on properties, corrosion resistance, weights, dimensions. Tells the story of Carpenter quality—Carpenter uniformity. Write for your copy, *today.*

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, New Jersey

If you write maker identify as IEN - 8553

Gage - Optical comparator for small parts production inspection

Source: GEORGE SCHERR OPTICAL TOOLS INC.
200 Lafayette St., Dept. IEN, New York 12, N. Y.

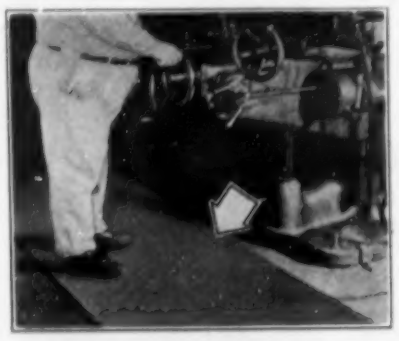
Fast and accurate

Wilder Model C is a new optical comparator particularly designed to inspect small parts in production. The image of the part is projected against an enlarged drawing on the instrument's illuminated screen. The horizontal work stage and the vertical beam of light permit most parts to be laid flat on the stage without a holding fixture. The screen and stage are positioned so they are in line with the operator's hand and vision for fast inspection. **The light source** is built into the comparator so there is no discomfort due to heat or interference with the operator. The lens provides an erect direct image. The instrument is equipped with one fixed magnification lens and a selection of four, available to order, at 20, 25, 31¼ and 62½ X.

If you write maker identify as IEN - 8554

Floors - Resilient pad for use by workers who must stand

Source: DURKEE-ATWOOD COMPANY
215 N. E. 7th St., Dept. IEN, Minneapolis 13, Minn.



Bulletin SR-554

Durapad is a new combination of fabric backed sponge rubber compound with vinyl plastic facing to protect the rubber and provide resistance against attack by oils, alkalis and chemicals. The pad is supplied in 18 and 36-in. widths and in any length to 40 yards. Thickness can be specified between ⅛ and 1 inch. Colors are green, brown, gray and black in standard arrangement.

The pad can be cleaned with soap and water or with solvents. It can be applied on any type of floor to serve as a cushion for standing workers. It also can be applied under office machinery, on counter tops, work tables. It can be die cut for use as a gasket.

If you write maker identify as IEN - 8555

Armco Drainage & Metal Products, Inc., 3594 Curtis St., Dept. IEN, Middletown, Ohio, has a good suggestion to conserve space and at the same time to add a new building when you need it. The suggestion is that you erect a new Armco building structure on the roof of one or more of your existing industrial buildings. The Steelox panels employed in the steel building are light and strong and are available in a range of sizes to meet your requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8556

SINGLE ACTING
BUDA
RATCHET LOWERING JACKS
5 TON CAPACITY

- Single acting—load is raised only by down stroke of lever bar. With reversing lever in "Down," load is lowered notch by notch.
- 9⅝" lift: Minimum toe height, 1¼"; Minimum cap height, 17". When jack is closed, toe engages load without interference by base.
- Extra rugged—broad wearing surfaces on housing and rack bar minimize repairs, increase life. Replaceable steel plate at housing top prevents internal wear. All bearings easily lubricated.
- Unusually safe—broad base for solid footing; heavy safety springs hold pawls in positive contact with rack bars . . . operate at any angle!

For complete information, see your Buda Jack Distributor or write us direct!

BUDA
A Division of Allis-Chalmers Manufacturing Company
THE BUDA COMPANY • Harvey, Illinois

If you write maker identify as IEN - 8557

KEEP ALL YOUR TRUCKS IN SERVICE ALL THE TIME

with Nutting Demountable RUBBER TIRED WHEELS

You don't have to buy expensive complete new wheels when tires are worn! Bolted assembly permits tire replacement in minutes—No special tools!

Next time you need new wheels, casters or trucks, change to Nutting Demountables. No stretch or creep under severest service—and only Nutting, pioneers in the field, has sizes and capacities for every type of truck or trailer.

JUNIOR CATALOG 54-G

For details and a representative listing of the most complete floor truck line in America write for Junior Catalog 54G . . . or consult classified phone directory under "Trucks" or "Casters" for nearest Nutting representative.

SINCE 1891 **Nutting TRUCK AND CASTER CO.**
2015 DIVISION ST., FARIBAULT, MINN.
Export Sales: Scheel International, Inc., 4237 North Lincoln Ave., Chicago 18, Ill.

If you write maker identify as IEN - 8558

"MARVEL"

Ball Bearing Portable Electric Blower

Model 2
$60.00
½ H.P.

Order one on 10 DAYS' FREE TRIAL

2/5 H.P. Model No. 3 — $75.00
1 H.P. Model No. 4 — $98.00

For blowing dust, dirt, chips out of motors, switchboards, or ANY industrial product. *Every* industrial plant is a prospect.

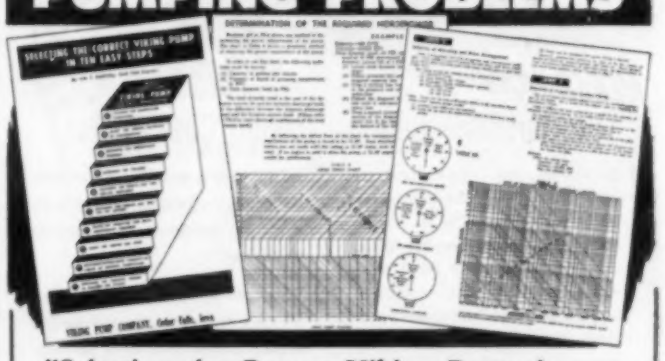
Write for Bulletin

Vacuum Cleaner Attachments for $18.00 additional for Models No. 2 and No. 3 only.
In daily use in more than 8,000 industrial plants.

ELECTRIC BLOWER COMPANY
352 Atlantic Ave., Boston 10, Mass., U.S.A.

If you write maker identify as IEN - 8559

HERE'S MORE INFORMATION TO HELP YOU UNDERSTAND YOUR PUMPING PROBLEMS



"Selecting the Correct Viking Pump in Ten Easy Steps" is a ten-page booklet designed to help engineers in choosing the right Viking Pump for each application. This folder is free upon request.

If you would like to have one or more copies, write today for Bulletin TS-6F.

VIKING AN HONORED NAME IN PUMPING

See Our Catalog in SWEETS

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

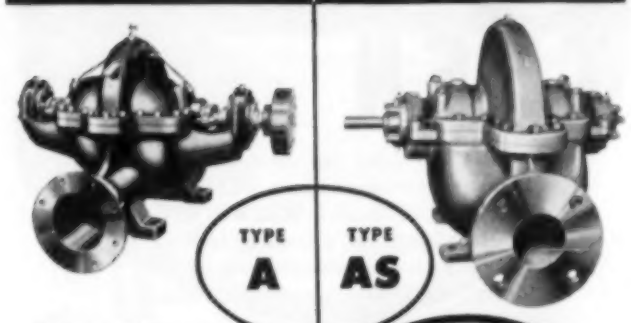
If you write maker identify as IEN - 8560

SPLIT-CASE BOOSTER PUMPS

Packing Gland and Mechanical Seal Types

WIDEST RANGE OF CAPACITIES, HEADS & HP IN ONE OF AMERICA'S MOST COMPLETE LINES

PACKING GLAND CONSTRUCTION | MECHANICAL SHAFT SEAL CONSTRUCTION



TYPE A | TYPE AS

A Up to 70,000 gpm
Up to 300 ft. head

AS Up to 750 gpm
Up to 230 ft. head

Request Bulletins:
Bulletin No. B-1300 for Type A;
Bulletin No. B-1350 for Type AS

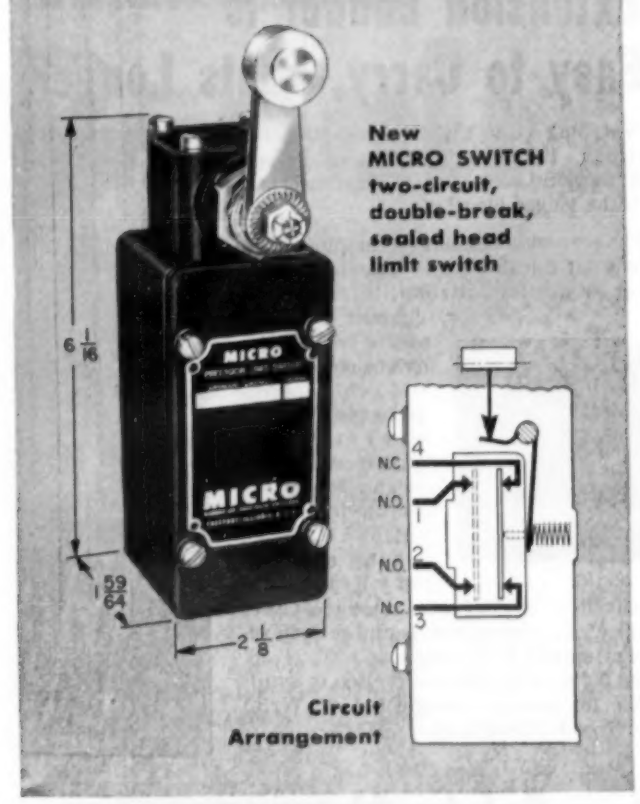
PEERLESS PUMPS

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
301 West Avenue 26, Los Angeles 31, Calif. • New York; Indianapolis; Chicago; St. Louis; Atlanta; Dallas; Phoenix; Los Angeles, Fresno, Calif.

If you write maker identify as IEN - 8561

MICRO SWITCH Precision Switches

A PRINCIPLE OF GOOD DESIGN



NEW Two-Circuit, Double-Break, Sealed Head, Heavy-Duty Limit Switch

• MICRO SWITCH heavy duty limit switches have long been favored by plant engineers and maintenance men to make present equipment more automatic, safer and more productive.

This new two-circuit, double-break, sealed head switch makes it possible to apply this versatile switch to applications that require the switching of two isolated circuits. The basic switching unit is enclosed in a sturdy aluminum housing which not only protects the switch from physical damage but seals are provided so that oil, water, grit, chips or other foreign matter have no effect on switch operation.

The roller arm actuator is adjustable through 360 degrees to any of 870 positive lock positions. The entire head is adjustable to any of four positions at 90 degree intervals. Electrical rating is 10 amperes, 110, 220 or 440 volts a-c.

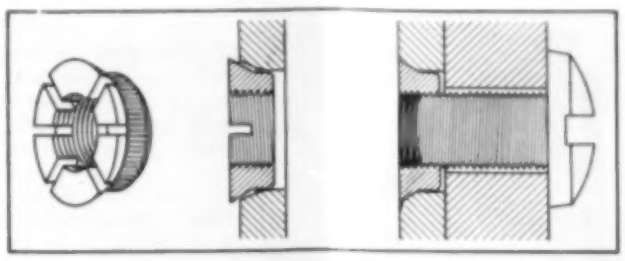
There are 180 MICRO SWITCH distributors located in 161 key cities to supply this new switch or any of the wide variety of MICRO SWITCH products for limits, safeties or interlocks. Locate him under "Switches, Electric" in your phone book.

MICRO SWITCH
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
FREEPORT, ILLINOIS

If you write maker identify as IEN - 8563

Fastening - Cone shaped locknut closes in to grip when bolt is turned

Source: ALLMETAL SCREW PRODUCTS CO.
835 Stewart Ave., Dept. IEN, Garden City, N. Y.



Patent is pending

A slotted cone constitutes one end of this new locknut with a splined cylinder making up the other portion of the solid metal unit. It is designed to insert in a countersunk hole where it is held against turning by splines on the cylinder shank. A bolt is inserted and turned in tightening direction to draw the nut down into the countersunk opening. Accompanying action, due to difference in taper in the cone section and the countersink, closes the slotted head in against the bolt threads.

Sizes range from No. 6 to ½ in. in standard thread designs. The nut remains in position and provides a flush assembly in its countersunk hole. It can be employed as a threaded insert to repair stripped threads. It can be specified in any metal.

If you write maker identify as IEN - 8564

Cutting - Abrasive discs to use on machines and portable tools

Source: CHICAGO WHEEL & MFG. COMPANY
1101 W. Monroe St., Dept. IEN, Chicago 7, Ill.

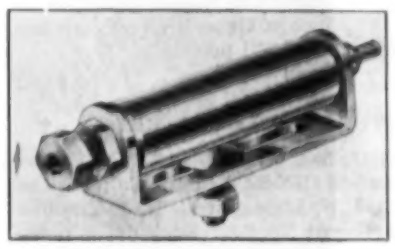
Technical data upon request

Two diameters are 7 and 8 in. in a new abrasive disc the company has developed for use on masonry and for general purpose cutting applications employing grinding machines, portable tools, flexible shafts. Each disc is featured by a universal center bushing that makes it unnecessary to buy special blades to fit a given tool. Each disc is packaged.

If you write maker identify as IEN - 8565

Cylinder - Single acting for clamping and work ejecting uses

Source: SUMMIT TOOL & MFG. COMPANY
2907 Summit St., Dept. IEN, Toledo 11, Ohio



Specials to order

Bore measures 1 in. and stroke is 2½ in. in the standard construction of this new single acting spring return pneumatic cylinder. The cylinder itself is assembled in a mounting bracket providing 3-in. longitudinal and 360-deg. radial adjustment.

The unit shown sells for $68 per dozen.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8566

Here's breathing protection against nuisance exposure to

ORGANIC VAPORS and ACID GASES

IT'S THE NEW!

McDonald
GASFOE RESPIRATOR

★ Light . . . only 4 ounces complete!! So perfectly engineered for balance that only slight tension on headband provides an absolute seal with complete comfort. ★ No interference with vision or working freedom. ★ Every part replaceable.

Write for bulletin and prices

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 8567

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 8568

Now! An Interrupting rating in excess of 100,000 amperes *for every set of fuse clips*

. . . simply by installing

FUSETRON *dual-element* FUSES

After years of development work, recent tests verified by the Electrical Testing Laboratories of New York indicate that an interrupting rating of 100,000 ampere for FUSETRON fuses is a conservative one.

On circuits set to deliver in excess of 100,000 ampere, 30 to 600 ampere, 250 and 600 volt FUSETRON fuses on every test cleared the circuit without belching flame or venting hot gases and with comparatively little noise.

No Interference with Time-Lag

Remarkable results have been achieved. Interrupting capacity has been greatly increased while the time-lag characteristics of FUSETRON fuses has in no way been disturbed.

You get ALL THIS ADDED SAFETY without changing a panelboard or switch . . . PLUS the 10 Point Protection of FUSETRON dual-element FUSES.

For safe protection on loads above 600 and up to 5,000 ampere install BUSS Hi-Cap FUSES.

These fuses have unlimited interrupting capacity on circuits of 600 volts or less. Designed to give protection against dangerous overloads as well as excessively high fault current — yet their high speed operation on heavy shorts limits currents to safe values. When coordinated properly with FUSETRON fuses they will not open ahead of the fuse nearest to the fault.

ACTION THAT SAVES YOU MONEY

Delay may cost you far more in losses than replacing every fuse with a FUSETRON dual-element fuse on loads up to 600 amperes — and BUSS Hi-Cap Fuses on loads above that.

For blowing time charts and more information on FUSETRON dual-element Fuses and BUSS Hi-Cap Fuses write for Bulletins FIS and HCS.

BUSSMANN MFG. CO. (Div. McGraw Electric Co.)
University at Jefferson St. Louis 7, Mo.

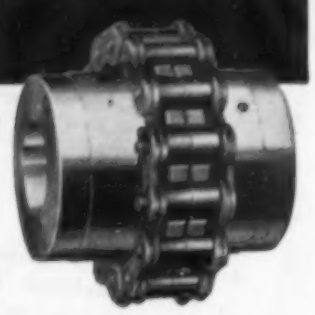
If you write maker identify as IEN - 8570

Only LINK-BELT "RC" Flexible Couplings give all 3 advantages at low cost

1 Equalized load

2 Proper balance at high speeds

3 Effective compensation for end float and misalignment



Link-Belt's exclusive design makes the difference. The simplicity of single-width chain is combined with divided rollers to give you top performance—plus economy. Specify Link-Belt Roller Chain Couplings for any rating from fractional to 1000 hp. Get all the facts from your Link-Belt representative or distributor, or write for Folder 2363. 18,510

LINK-BELT

"RC" Flexible Couplings

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (S. Africa), Sydney (Australia). Sales Offices, Factory Branch Stores, Distributors in Principal Cities.

If you write maker identify as IEN - 8571

WIGGINS **INST-O-MATIC** COUPLINGS

QUICK—DISCONNECT

3000 psi

Manual Quick Disconnect (Push-Pull Positive Action)

Automatic Quick Disconnect (Breaks Away at Pre-determined Weight Load)

for high pressure HYDRAULIC FUEL and PNEUMATIC Systems

SIZES: 1/4" TO 2 1/2"

WRITE FOR FURTHER INFORMATION

Wiggins

E. B. WIGGINS OIL TOOL COMPANY, INC.

3424 East Olympic Boulevard, Los Angeles 23, California

If you write maker identify as IEN - 8572

NEW BEARING CALCULATOR

Free!

Gives you needed load, speed and life data with slide-rule speed

Here is a real time saver for thrust bearing users—a slide scale that calculates quickly the basic information necessary to proper bearing selection. Easy to use. Practically eliminates pencil-and-paper calculations. Supplied free on request. Mail coupon today!

Aetna

AETNA BALL AND ROLLER BEARING COMPANY
Division of Parkersburg-Aetna Corporation
4600 Schubert Avenue, Chicago 39, Illinois

Please send me, free of charge and without obligation, your new Bearing Calculator.

NAME_____ TITLE_____

COMPANY_____

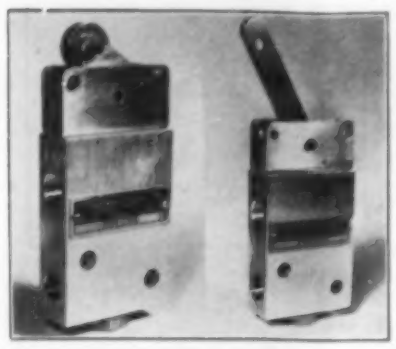
ADDRESS_____

CITY_____ ZONE_____ STATE_____

If you write maker identify as IEN - 8573

Valve - Three way pilot for cam, lever, push button operation

Source: AUTOMATIC VALVE CO.
37415 Grand River Ave., Dept. IEN, Farmington, Mich.



Fits ¼ inch pipe

Illustrated are two of five available models of the company's pilot operated valve for use on small spring return cylinders and on pneumatic and hydraulic master valves. The main body is made of aluminum and measures 2 by ¾ by 3⅛ in. including the wrench head at the bottom. The wheel equipped unit, for cam operation, adds 2⅛ in. to the height. The lever adds 2⅞ inches. Stud and two button designs add ⅝ and ⅞ in., respectively.

The mechanism consists of two balls with a rod spacer that holds one off its seat when the other is seated. Both balls are spring backed and enclosed in sleeve guides. The upper guide is moved down to unseat the bottom ball and seat the upper one or is released for the opposite arrangement. The valve is rated for pressure to 150 lb. and is available to order for low pressure hydraulic operations.

If you write maker identify as IEN - 8574

Shearing - Motor driven machine cuts to outline, mild steel to 10 gage

Source: STANLEY ELECTRIC TOOLS
480 Myrtle St., Dept. IEN, New Britain, Conn.

Cuts to 15 fpm.

Adjustable stroke for various metal gages, ability to start an inside cut without a starting hole, and patented blade action that assists in feeding the work, characterize this new Model U-3610 Unishear. The machine will cut to the center of a 72-in. sheet. It is started, on an inside cut, after retracting the lower head by means of a foot pedal. Drive is by a ¾-hp. motor for operation on specified standard current characteristics. Dimensions are 23½ by 25½ in. at the base. The throat measures 36 inches. Overall dimensions are 60 by 24 by 64 inches. Weight is 1,325 pounds.

If you write maker identify as IEN - 8575

New size, measuring $\frac{5}{16}$-18, has been added to the line of wing nuts, previously described IEN-6903-48, for Palnut Company, 61 Cordier St., Dept. IEN, Irvington 11, N. J. The line now includes six sizes starting at No. 6-32. Each nut is made of tempered spring steel to combine the standard Palnut locking design with wings for finger tightening. The company will supply samples on request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8576

You Cannot Beat Turbine-Type APCOS for Small Capacity, High Head Duties

Capacities to 150 G.P.M.

Heads to 600 Ft.

APCO Single Stage Turbine-Type Pump

PUMPS "by Aurora"

For Every Purpose

Write for BULLETIN 111

APCO Turbine-Type PUMPS —Ideal for "1001" duties where small capacities and high heads predominate. Get acquainted.

AURORA CENTRIFUGAL PUMPS are available in many types and sizes—all noted for their streamline coordination between impellers and shells.

We Invite Your Special Pump Problems

Write for CONDENSED CATALOG "M"

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS

AURORA PUMP COMPANY

DIVISION OF THE NEW YORK AIR BRAKE COMPANY
52 Loucks Street • Aurora, Illinois

If you write maker identify as IEN - 8577

IF

Magnets can solve your tooling problems

THEN

A Cerro Alloy can solve the problem of fastening magnets WITHOUT PRESS FITS, SET SCREWS, ETC. Many hours can be saved by locating and anchoring magnets with Cerrotru, expanding low fusing metal.

Write today for Pamphlet A1 and receive many time-saving ideas for fastening non-moving parts *without machining.*

CERRO DE PASCO CORPORATION

Dept. 6, 40 Wall Street, New York 5, N. Y.

If you write maker identify as IEN - 8578

New Safety Aluminum Extension Ladder is Easy to Carry, Lasts Longer

Weighing only 1¾ lbs. per foot, this strong, lightweight Safety Aluminum Extension Ladder is easily carried, even in the longer lengths.

The corrosion resistant aluminum offers unusual durability; is immune to rust, rot or mildew. Strong, interlocking-channel side rails assure trouble-free extension. Positive self-locking safety locks (see illustration) are easily adjusted at any height. Rungs are double-bolted to rails, and have heavily serrated top edges to prevent slipping. Combination type feet have super grip rubber treads and self-sharpening spikes. Available in 16', 20', 24' 28' and 32' lengths. Bottom section is available for use as a single ladder. Write for free Bulletin L-76.

New Safety Aluminum Stepladder is Securely Braced

Designed for maximum safety and strength, this easily-handled Safety Aluminum Stepladder weighs only 2¾ lbs. per foot. Heavy-duty steps are double riveted to extra rigid, channeled side rails. Deeply grooved top and steps prevent slipping. Safety-type spreaders never pinch fingers. All four legs have heavy-duty rubber boots to protect floors and prevent slipping. Available in 4', 5', 6', 7', 8' sizes. Write for free Bulletin L-76.

PS Co. offers a complete line of safe, easy-to-handle magnesium ladders as well as famous "Gold Medal" wood ladders. Write for free Bulletin L-70 and Catalog L-71.

Gold Medal Ladders Scaffolding

FOR GREATER SAFETY...EFFICIENCY...ECONOMY

THE PATENT SCAFFOLDING CO., INC.

38-21 Twelfth Street • Dept. IEN • Long Island City 1, N. Y.

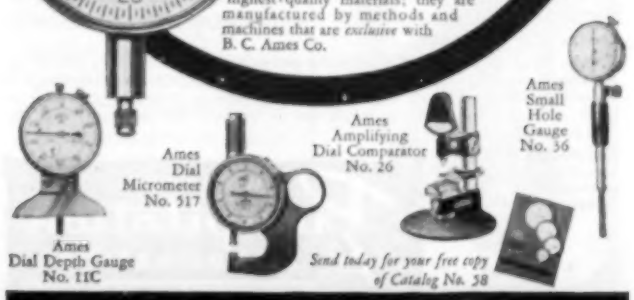
Branches in All Principal Cities

If you write maker identify as IEN - 8580

AMES

...the preferred Dial Indicators

One of America's largest and most famous mass-producers recently chose Ames as preferred source of supply for indicator gauges. They did because the four sizes of Ames "Hundred Series" indicators fit every measuring requirement; they are *accurate, sensitive,* low in friction, yet are *rugged* and *tough* — give *more* on-the-job time. All Ames products embody latest design and highest-quality materials; they are manufactured by methods and machines that are *exclusive* with B. C. Ames Co.



Send today for your free copy of Catalog No. 58

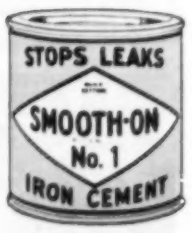
Representatives in principal cities. **B. C. AMES CO.** *33 Ames Street Waltham 54, Mass.*

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

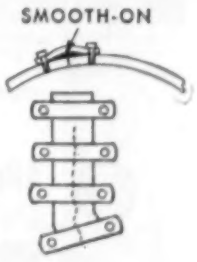
If you write maker identify as IEN - 8581

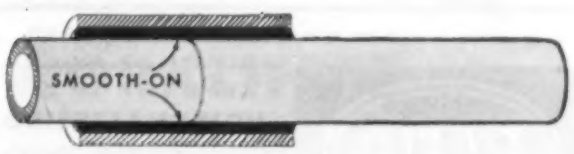
QUICK, LOW COST EMERGENCY Repairs

When you just *have* to get a boiler, or machine or plumbing system back in working condition fast, Smooth-On Iron Cement saves the day . . . and saves you many dollars, too. It makes the repair quickly. Tides you over until the permanent job can be done.

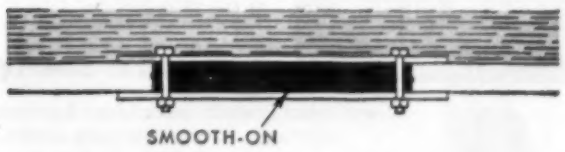


Reinforced Crack Repairs in boilers, water tanks, etc., can be made with Smooth-On No. 1 Iron Cement, as shown. Smooth-On is forced into the crack and a patch plate is then applied over the area with straps held in place by machine screws. As Smooth-On hardens it expands against the patch, making a tight, durable seal.





Emergency Pipe Joint. The same expansion principle applies here. Put the pipe ends into a section sawed from a larger pipe and pack tightly with Smooth-On.



Broken Parts. A broken casting can be repaired temporarily, as illustrated. You make a Smooth-On "sandwich" by bolting on a patch plate at top and bottom.

These are just a few of the many emergency repairs possible with Smooth-On. Better keep a can on hand! Others are described in the *free* Smooth-On Repair Handbook. Ask your supply house for a copy or write us.

SO 410

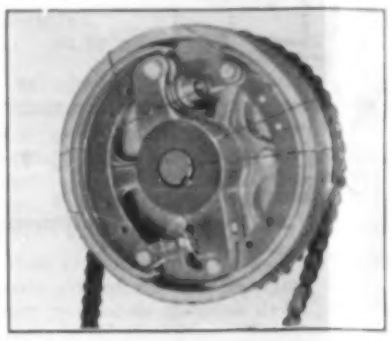
SMOOTH-ON MANUFACTURING COMPANY
Dept. I, 570 Communipaw Avenue, Jersey City 4, N. J.

SMOOTH-ON

If you write maker identify as IEN - 8583

Drive - Torque limiting clutch slips when preset overload is imposed

Source: METALWASH MACHINERY CO.
901 North Ave., Dept. IEN, Elizabeth, N. J.



Spring backed shoes

The company announces availability of a torque limiting friction clutch, initially developed for its own use. The clutch can be supplied in a range of sizes and power transmitting capacities for equipment similar to the company's own lines of washing, pickling, drying and phosphatizing machines. It mounts on a driven shaft so its drum A and driving sprocket B ride free.

The drum encloses two friction lined brake shoes that are pivoted on a spider keyed to the shaft. Springs at the ends of the shoe assemblies, opposite to the pivot points, establish shoe pressure against the inner face of the drum. Nuts, backing up the springs, can be turned to adjust this pressure and determine the point at which the clutch will slip.

Tests on a 7¼ in. clutch, measured over the inside diameter of the driving drum, showed 60.2 ft. lb. of torque transmitted when spring force was 200 lb. in the non-self energizing design. Torque was 167 ft. lb. when spring pressure was 200 lb. in the self-energizing design. The clutch tested is rated at 3 hp. at 100 rpm. It can be employed at speeds to 500 rpm.

If you write maker identify as IEN - 8584

Storing - Steel locker assembles on job, is pilfer-proof

Source: AURORA EQUIPMENT CO.
422 Cleveland Ave., Dept. IEN, Aurora, Ill.

Equiptogram 2054

Rolled edges, recessed handles and louvers, elimination of the need for nuts and bolts, concealed hinges and steel gray baked enamel finish characterize the construction of this new Modern-Flow steel locker. The steel parts are phosphate treated prior to finishing for resistance to corrosion.

Assembly on the job is accomplished by sliding the sides, the back, base, top and shelves together in interlocking channels formed in the various members. The door is hung on four hinge pins that cannot be removed when the door is in closed position. A four point latching mechanism and a locking attachment makes the locker pilfer-proof.

The unit is available in 60 and 72-in. single and double tier designs. Three widths, in the single tier unit, are 12, 15 and 18 inches. Four depths are 12, 15, 18 and 21 inches. The double tier locker is available in 12 and 15-in. widths and in 12, 15 and 18-in. depths.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8585

SPEEDY AIR VISE

SPEEDS UP

✓ MILLING ✓ PUNCHING
✓ DRILLING ✓ BENDING
✓ TAPPING ✓ RIVETING

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only **$36.00**

Prompt Delivery from Your Supplier or Write Direct

W. E. BROWN CORPORATION • 2645 N. Normandy Avenue, Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN - 8586

For faster, lower cost assembly...

You'll get big savings on assembly operations with Stackbin Assembly Bins. Work station layouts are more efficient. Parts are kept close to worker's hands . . . reaching and fumbling is eliminated. Shallow angle lip is just right for finger tip control. Operators can select with both hands. Sloping bottom feeds parts continually toward the front. With adjustable hoppers, there are always plenty of parts when and where they're needed.

Stacking feature permits rigid setups, allows flexibility when layout is changed.

Stackbin Assembly Bins feature all-welded construction with smooth, folded edges. 6 sizes with straight or tapered sides. Also available with rear-loading feature.

WRITE TODAY for full information on the Stackbin System of economical materials handling and storage.

Stackbin Corporation, 1077 Main Street, Pawtucket, R. I.

Mfgd. and sold in Canada exclusively by Wickwire-Stackbin, Ltd., Ottawa

STACKBIN "Stacked and Still Accessible" **SYSTEM**

If you write maker identify as IEN - 8587

FREE air compressor fact folders

Get the low-down on air compressors — ask today for these new fact folders.

They tell you all about air compressors — how to select them, how to care for them and how to put them to work at new and different jobs.

Write to Worthington Corporation, Section PC.4.13A, Merchandising Division, Harrison, N.J.

PC.4.13

WORTHINGTON

If you write maker identify as IEN - 8588

Peter A. FRASSE & Co., Inc.

announces the distribution of

REYNOLDS ALUMINUM

NOW—Frasse, as distributor for the Reynolds Metals Company, can furnish your aluminum requirements direct from warehouse stock.

Aluminum rods, bars, wire, sheets, plates, tubing and extruded shapes in a complete range of sizes and a wide variety of grades can now be supplied by Frasse . . . quickly and efficiently.

The same dependable service and technical assistance you have used in the past for carbon, alloy and stainless steels and tubing are available when your need is aluminum.

We will welcome the opportunity to be of service.

Peter A. FRASSE and Co., Inc.
17 GRAND STREET, NEW YORK 13, N.Y. • WAlker 5-2200
LYNDHURST • PHILADELPHIA • BUFFALO • SYRACUSE • HARTFORD

If you write maker identify as IEN - 8589

Can You Use SELF-LUBRICATING JOHNSON LEDALOYL BEARINGS?

IF SO, YOU WILL SAVE MONEY

NEW USES for these porous, oil-impregnated bearings are being discovered every month. You may need them for applications difficult to lubricate. They may even be sealed in place. Made by powder metallurgy, they are very low in cost. Johnson engineers will assist you in determining whether Ledaloyl Bearings can be used to advantage. Write today.

Johnson Bronze
SLEEVE BEARING HEADQUARTERS
476 SOUTH MILL STREET • NEW CASTLE, PA.

If you write maker identify as IEN - 8590

how 10 characteristics of GAST rotary AIR MOTORS solve tough original equipment problems

Just one of these ten inherent advantages of Gast rotary Compressed Air Motors may solve knotty problems on your original equipment applications.

1—Low first cost. 2—Explosion-proof safety. 3—Variable speed. 4—Can't burn out from overloads or stalling. 5—Four vanes — instant starting. 6—Amazing compactness for HP. 7—Light weight —to ¼ of electric motor. 8—Smooth rotary-vane ball-bearing performance. 9—Reversible models. 10—Dependability for long service.

Now standard equipment on many products. Four sizes, many design variations. Vertical or horizontal drives; base or flange mountings. INVESTIGATE NOW!

see our catalog in PRODUCT DESIGN FILE or write for copy

WRITE GAST for Air Motor Bulletins. Request "Ideas" Booklet.

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY AIR MOTORS · COMPRESSORS · VACUUM PUMPS
(TO 4 H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN - 8591

use AVERY Kum Klean LABELS

- REDUCE LABELING COSTS
- ELIMINATE WASTE MOTION
- SPEED ASSEMBLY OPERATIONS

Because Avery labels are pressure sensitive, they're the fastest, easiest and most economical labels you can use... for nameplates and trademarks, for guarantees and instructions—for approval seals, diagrams and many, many other uses.

They can be supplied in any size, shape or color... on backing tape in roll or sheet form... to meet your own specific labeling requirements.

With Avery electric dispensers labeling is as much as 5 times faster than with ordinary methods!

You can save time and money by using these labels in YOUR business. Clip the coupon for FREE samples.

AVERY ADHESIVE LABEL CORP., DIV. 103
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☐ Send us case histories & free samples
☐ Tell us about your dispensers
☐ Have the Avery Label Man call

Name
Company
Address
Our business is:

If you write maker identify as IEN - 8592

Aluminum—Welding instruction book contains 176 pages on methods and equipment

"Welding Alcoa Aluminum" devotes a chapter each to inert-gas-shielded arc welding with tungsten and consumable electrodes, spot and seam welding, flash-welding, metal arc, carbon arc, atomic hydrogen, gas welding. An introductory chapter describes how to select the best method for the application. One chapter on weld performance outlines methods for designing parts with welded joints. Quality control and safety are among the concluding chapters. There is a section of 32 tables on physical properties of alloys, weld strengths, with drawings to show edge preparation. Aluminum Company of America, 1501 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.

If you write maker identify as IEN - 8593

Aluminum—Bending and forming instructions, both hand and power, in new 272-page book

Letterhead request by qualified individuals will bring a copy of new bound book, "Forming and Bending Kaiser Aluminum". List price to others is $2. The book covers forming with hydraulic and mechanical presses, bending with power and hand brakes, forming with rubber dies, roll forming, spinning, pipe bending, tangent bending and stretch forming. It describes characteristics of specific alloys and suitability to particular operations, compares methods, suggests techniques for individual problems. Kaiser Aluminum & Chemical Sales Inc., 919 N. Michigan Ave., Dept. IEN, Chicago 11, Ill.

If you write maker identify as IEN - 8594

Drilling—Twist drill chart shows eight types with uses and point angles

Letterhead request will bring you a copy of the company's new Twist Drill Applications chart. It measures about 19 by 25 inches. It illustrates eight types, from general-purpose to short-length, together with longitudinal sections to show web construction, flute contour and amount of spiral. Accompanying each type is a note on intended application. Also shown are taper-shank and straight-shank taper-length drills. A section at the bottom shows point angles recommended for various materials, lists speeds and feeds. Whitman & Barnes, Dept. IEN, Plymouth, Mich.

If you write maker identify as IEN - 8595

Engines—Textbook on diesels and gas engine deals with fundamentals

Non-technical language and a minimum of mathematics are employed in new 400-page textbook, "Diesel and High Compression Gas Engines—Fundamentals", by E. J. Kates. List price is $5.50. It stresses the how and why of diesel engines, starts with a definition that leads into distinguishing features, basic construction, fuels, rating, lubrication, maintenance points. American Technical Society, 848 E. 58th St., Dept. IEN, Chicago 37, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8596

JUST PLUG IN TO 115V FOR TEMPERATURE RANGE OF +250° TO —100°

Standard Interior Dimensions. 16 x 16 x 16; 20 x 20 x 18 In.

CONRAD PORTABLE TEMPERATURE TEST CHAMBERS

Here is low cost answer to the need for precision controlled temperature test chambers in laboratory or plant. New Conrad test chamber is caster mounted for full portability. Dimensions permit passage through 30" door. Air cooled, no plumbing attachments. Just plug into 115V circuit (220V 3 phase model also available.) Temperature range +250° to —100° F.

PROVEN DESIGN — FULLY INSTRUMENTED

The new Conrad portable chamber is based on years of experience in producing environmental chambers of all types. Interior stainless steel. Insulation is rigid permanent type. Coolant is safe Freon so chamber can be used anywhere with no hazard.

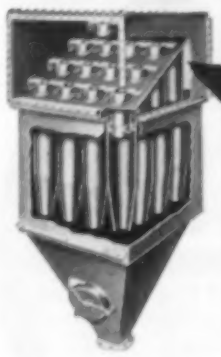
Forced air circulation. Adjustable Indicating Thermostat Controller. Differential + or —2°F. Control Switches grouped on engraved indicator plate. Proportional capacity for heating, cooling rate available.

Conrad also produces a full range of temperature, humidity, altitude environmental chambers; dry or liquid. Write for data sheets and prices.

CONRAD, INC. 141 Jefferson St. Holland, Michigan

If you write maker identify as IEN - 8597

There's a difference between COMPACTNESS and SPACE ADAPTABILITY...



The MULTICLONE has BOTH!

IN SELECTING dust recovery equipment, every foot of space saved is that much more valuable area available for other equipment. And the compactness of the equipment you select is just one of several ways to save plant space. Equally important is the *adaptability* of the equipment to space limitations within an existing plant.

And this is how the MULTICLONE *makes two-way savings in space:* The MULTICLONE itself is unusually compact, requiring as little as 1/6 the floor space, ¼ the cubic space of other units of comparable performance.

In addition, the shape of the MULTICLONE is readily adaptable to various space requirements and can be varied to fit odd-shaped or restricted areas that would otherwise be waste space.

For this reason you can fit the MULTICLONE into unbelievably small spaces, thus saving valuable plant area. But space-saving is just *one* of many MULTICLONE advantages. It is unusually efficient... has no high-speed moving parts to maintain, no screens to clean or replace... is simple to install, easy to service... and has many other important advantages.

Get the full story by sending for this MULTICLONE booklet!

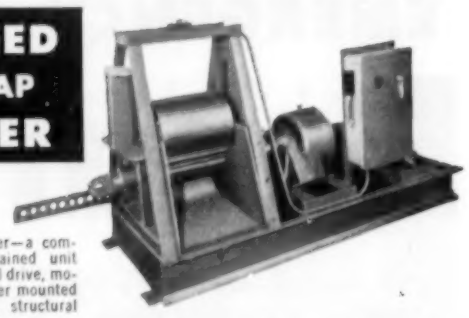
WESTERN Precipitation CORPORATION
DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR PRECIPITATION OF PARTICLES SUSPENDED IN GASES OR LIQUIDS
Main Offices: 1031 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2
1429 PEACHTREE ST. N.E., ATLANTA 3 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 8598

MAKES BALES

of strip shearings — stringy scrap

ALLIED SCRAP BALER



The Allied Baler—a complete, self-contained unit including geared drive, motor and controller mounted on a portable, structural steel base.

Lead-in piece is hooked to winding spindle. Tangled mass is dragged in.

Bale partly formed. Compacting roller and contour of baling box form dense uniform bales.

Full bale completed; 19" dia., 19" lg., approx. 400 lbs. ready for sale.

Write for further information.

Allied Steel and Conveyors, Inc.
17311 Healy Ave. • Detroit 12, Mich.

If you write maker identify as IEN - 8599

"FULFLO" VALVES

BY-PASS, OIL-RELIEF PISTON TYPE, HYDRAULIC

NON-CHATTERING because the cylindrical piston closes off the port in a shearing manner . . . and does not seat abruptly against the body of the valve.

EXTREMELY SIMPLE

Just select pressure desired from 5 springs . . . INSTALL . . . NO FURTHER ATTENTION NEEDED.

For machine tool hydraulic mechanisms, oil-burning equipment, rams, presses and Diesel engines.

Pressures: 0 to 500 lbs.
Pipe sizes ¼" to 2"
Bodies: cast iron or brass. Pistons: brass, hardened or stainless steel.

STANDARD OR FLANGE MODELS

Write on your letterhead for professional edition of FULFLO MECHANICAL DATA BOOK

SPECIFY If for Valves, for Pumps or for both.

FULFLO THE FULFLO SPECIALTIES CO. Inc.
BLANCHESTER, OHIO

If you write maker identify as IEN - 8600

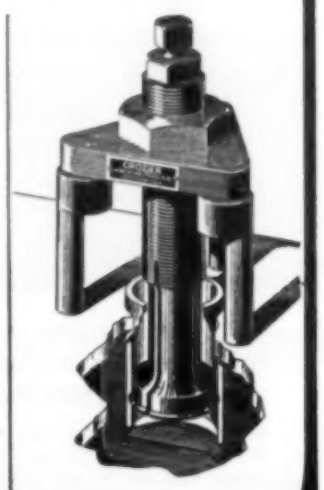
NEW EXTRACTOR

removes bushings from blind holes

...cuts time 75 per cent

The entirely new method of extracting bushings, bearings, sleeves, liners, etc. Eliminates necessity for machining, minimizes the hazard of injury to casings or excessive dismantling of equipment, handles holes from ½ to 2"—over 5 tons have been extracted with unit. Eliminates as much as 75 per cent of labor and time, slashes inventory.

For complete information write Department IEN-8.



CROZIER *Machine Tool Co.*

584 NO. PRAIRIE AVENUE, HAWTHORNE, CALIFORNIA

If you write maker identify as IEN - 8601

ECONOMY LIFTERS

Sturdy Structural Steel Frame Engineered for Extra Stability and Strength

SHOPLIFTER

LIFTS-MOVES-SEPARATES HEAVY DIES AND MOLDS

Safely handles heavy dies from storage rack to press—lifts barrels, boxes—helps load trucks—or as a handy adjustable shop table. Automatic brake holds load at any height.

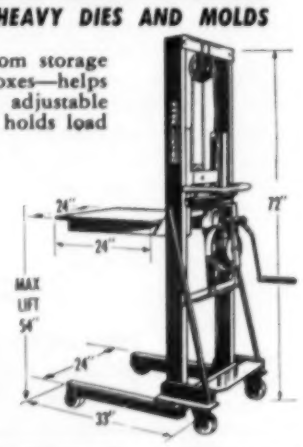
Type D — Hand operated. Cap. 500 lbs.....$183.60

Type DE — Electric operated. Cap. 500 lbs.....$412.08

Type DX — Hand operated. Cap. 1000 lbs.....$349.52

Type DX — Hand operated. Cap. 2000 lbs.....$417.52

Floor lock included. Prices net, f.o.b. Chicago.

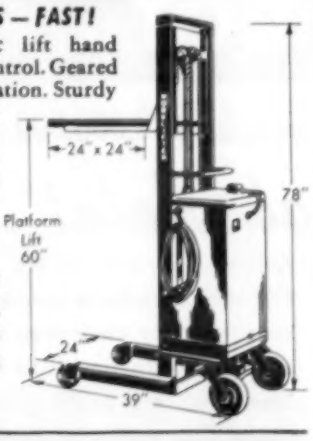


WORKLIFTER

STACKS 1000 LB. LOADS — FAST!

Battery powered, hydraulic lift hand truck. Push button remote control. Geared pump for smooth, quiet operation. Sturdy structural steel frame. 12 volts (two six volt batteries) lifts loads fast. Built-in, 8 amp/hr battery charger. Power shut-off to prevent excessive overload. Roller bearing, solid hard rubber wheels.

60" platform lift, $695.00. 80" platform lift, $795.00. Adjustable fork models for pallets from $810.00. Many other models for special applications.



ELEVATING TABLE

ADJUSTABLE HEIGHT — 2000 LBS. CAPACITY

For feeding sheet stock, supporting fabricated frames, handling heavy dies or as a portable work bench.

Self-locking worm and screw elevating mechanism holds work at any height without danger of falling.

Table dimensions 24" x 36". Height adjustable between 24" minimum and 42" maximum. Foot operated floor lock holds table stationary when not in use.

Net price, $210.80 f.o.b. Chicago.

Representatives and Distributors in All Industrial Areas

ECONOMY ENGINEERING CO., 4502 W. Lake St. Chicago 24, Ill.

ESTABLISHED 1901

USEFUL INFORMATION —*Continued*

If you write maker identify as IEN - 8603

Castings—Information booklet on precision castings and a production service

Intended originally for the company's own salesmen, new information booklet is offered on request as an informative description on investment casting. It describes the method step by step, tells what to avoid, materials, size and weight of parts, tooling, inspection. Ask for 12-page Bulletin VR-471. Vascoloy-Ramet Corp., 800 S. Market St., Dept. IEN, Waukegan, Ill.

If you write maker identify as IEN - 8604

Corrosion Proofing—Data sheets on new applications for plastic coatings

File folder and three initial data sheets are offered on request to acquaint you with the possibilities of plastisol protective coatings and linings for metal equipment. Additional data sheets will be issued at intervals on new applications as they come along. Large metal structures to resilient-coated TV tube racks is the scope. Ask for "Arbonite Coatings". Arbonite Corp., 900 N. Main St., Dept. IEN, Doylestown, Pa.

If you write maker identify as IEN - 8605

Equipment—Directory of 230 pages on machines, tools, trade names, industries served

"Tools of Our Time" titles new directory that lists thousands of products for some 800 manufacturers. List price is $5. First of five sections is an alphabetical list of manufacturers by their products and trade names along with a reference to the company's large catalog. Second is an alphabetical list of products from abrasive machines to wrenches, with makers and product pictures given. Third is a list of trade names by manufacturers. Fourth is a list of industries the company can serve. Fifth is a list of machinery and equipment used by 15 general industries. Marshall Tool & Supply Corp., 2850 E. Olympic Blvd., Dept. IEN, Los Angeles 23, Calif.

If you write maker identify as IEN - 8606

Foundries—Instructions on shell molding in booklet that details the method step by step

Shell Molding Manual titles 28-page Bulletin CDC-272 on the shell molding method of producing castings in thin molds that employ a plastic binder. It describes twelve steps from blending of sand and resin to the final shakeout. It compares shell molding with other methods of producing metal parts. Included are trouble-shooting hints, testing procedures, a set of examples, addresses of equipment suppliers. General Electric Co., 101 Plastics Ave., Dept. IEN, Pittsfield, Mass.

If you write maker identify as IEN - 8607

Hard Facing—Flame plating process described in bulletin with examples of application

"Flame Plating" is a method of applying a hard wear-resistant thin coating of tungsten carbide to metal parts and tools. New 16-page Bulletin F-8065B tells about the method, properties of the coatings produced, applications of as-deposited and finished coatings, gives instructions on preparing and finishing parts. Linde Air Products Co., Div. Union Carbide and Carbon, 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8608

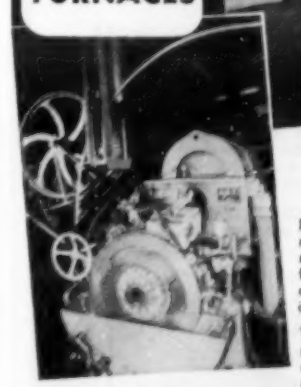
Southwire Company

PRODUCES— high conductivity aluminum wire direct from the molten metal...

with the help of

AJAX FURNACES

Above photo shows aluminum rod passing from the Properzi casting machine in the background to the rod mill in the foreground. AJAX furnace is at right of the Properzi machine.



Close-up of Properzi machine showing how molten metal is fed to it from AJAX furnace.

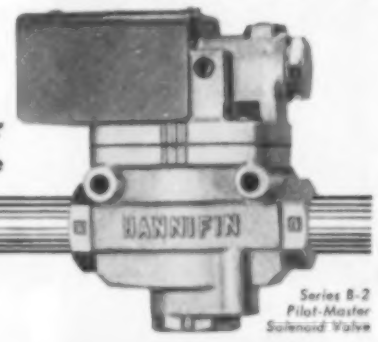
In connection with the well-known Properzi method, the Southwire Company of Carrollton, Georgia, is using an AJAX low-frequency induction furnace for the quick and efficient melting of high purity aluminum.

This combined melting and holding furnace is ideally suited to mass or continuous production processes, because the molten metal can be fed in a steady stream from the holding reservoir of the furnace, which in turn is kept supplied with metal from the melting reservoir.

AJAX TALAS-WYATT — AJAX ENGINEERING CORP., TRENTON 7, N. J. — **INDUCTION MELTING FURNACE**

If you write maker identify as IEN - 8609

Once a *"P-M" Pilot-Master* Air Control Valve is put in a line...it is



Series B-2 Pilot-Master Solenoid Valve

never removed!

That's right: You use a pipe wrench only once...then never touch the piping again. To renew this valve you simply replace a cartridge that contains all the working parts. The valve body—a simple, sturdy housing—need never be removed from the line. Think of what this can mean to you in reduced down time and lower maintenance costs! Plan now to standardize on Hannifin Pilot-Master Valves.

- 2-way, 3-way and 4-way
- All sizes ¼" to 1¼"
- Pressures from 15 to 150 P.S.I.

WRITE FOR BULLETIN NO. 231

HANNIFIN

Hannifin Corporation, 1107 S. Kilbourn Ave., Chicago 24, Ill.

AIR AND HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

If you write maker identify as IEN - 8610

DO YOU *Roll* **FLEXIBLE MATERIALS?**

Dyken Automatic Rolling Machines give you important time and labor savings on

SCREENING • LAMINATED PAPER • TEXTILES
ROOFING • CARPETING • WALLPAPER
RUGS • PLASTIC • RUBBER • LEATHER
OILCLOTH • LINOLEUM • CANVAS • CORK
PADDING • FELT • BURLAP • INSULATION

and other pliable materials!

NOW YOU CAN roll up more lengths per hour . . . with less labor! Rolling and paper-wrapping also handled in one speedy operation. DYKEN Automatic Rolling Machines (fully patented) are available for all material widths and lengths. Push-button operation permits using unskilled help. Tight, neat rolls require no center core or pole. You save time—labor—shipping and storage space.

WRITE FOR LITERATURE AND RECOMMENDATIONS — Send details of your problem for expert analysis and advice. No obligation.

DYKEN MFG. CO., Inc. 734 Indiana Ave. West Bend, Wis.

If you write maker identify as IEN - 8611

IDEAL "Hand Type" CLEANERS — *Cut Cleaning Time and Costs!*

3 MODELS ...for EVERY CLEANING JOB

For easier, faster maintenance or production cleaning jobs — on machinery, stock bins, scrap pick up — there's an IDEAL "Hand-Type" Cleaner to meet your needs exactly — to save you money! Three great models, all built to rugged, real industrial standards. Get today's top cleaner value — get IDEAL!

Sold Through Leading Distributors

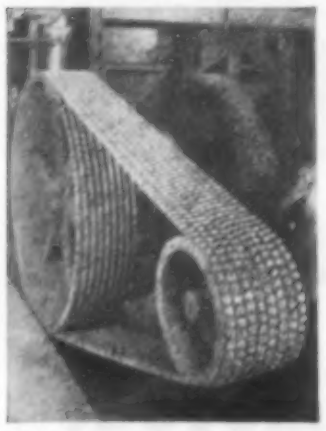
FREE CATALOG DATA

IDEAL INDUSTRIES, Inc. 1108 Park Avenue, Sycamore, Illinois

Please send me FREE CATALOG data on IDEAL "Hand-Type" Cleaners.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE____

If you write maker identify as IEN - 8612



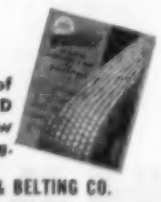
New VEELOS TD and TE Adjustable V-belts for D and E Drives

...easier to couple and uncouple

...longer lasting

THIS new Veelos is *installed quickly* without removing the outboard bearings found on most D and E drives. It is the easiest V-belt to couple and uncouple ever developed. Cup-washers and T-screws join links together to form individual belts of any length. Veelos TD and TE *lasts longer*. New high-tensile strength links plus the new stud, cup-washer and T-screw design give *added strength*—combine this added strength with *maximum flexibility* for cooler, smoother running.

Veelos is known as Veelink outside the United States.



VEELOS THE LINE V-BELT

Get the complete story of this great new V-belt for D and E drives. Send for new 8-page illustrated catalog.

MANHEIM MANUFACTURING & BELTING CO.
651 Manbel St., Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 8613

"We've reduced our scrubbing time from 70 to 7 man-hours ... and our floors have never before been so clean!"

— Says foreman of BURNY BROS. BAKERY, CHICAGO

Burny Bros. garage and stockroom floors get daily scrubbing with a *Job-Fitted Combination Scrubber-Vac* and *Setol Cleanser. They're an unbeatable team* to speed the cleaning of oily, greasy floors. *Here's why:* A *Scrubber-Vac* applies the cleanser, scrubs, and picks up—*all in one operation! Job-fitted* to specific needs, the machine provides maximum brush coverage. Its teammate, *Setol Cleanser*, emulsifies grimy oil and grease *instantaneously* for fast, thorough removal by the machine's powerful vac. The *Scrubber-Vac* shown above, *Finnell's 213P*, cleans up to 8,750 sq. ft. per hour! For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2608 East St., Elkhart, Ind.

FINNELL SYSTEM, INC.
Originators of Power Scrubbing and Polishing Machines
FINNELL
BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 8614

NOW BETTER BIGGER SMALL PARTS INSPECTION

A 1001 products from pen points to fine fabrics, dies, casts and molds to intricate surface detail quickly inspected with the

'MICROCARD READER'

EASY TO CARRY— SET UP ANYWHERE

Here's the new, economical method of "pin point" accuracy in inspection of small parts and products. Control your quality by instantly magnifying the smallest part 23 times for accurate, detailed inspection. The Microcard READER is the low cost way to higher quality for you. WRITE TODAY FOR COMPLETE INFORMATION ON "INSPECTION APPLICATIONS" IN YOUR INDUSTRY.

THE MICROCARD CORP.
READER DIVISION
Box 314D
LA CROSSE, WIS.

USEFUL INFORMATION —Continued

If you write maker identify as IEN - 8615

Management—Book on quality control emphasizes methods and practical applications

"Quality Control", by Norbert L. Enrick, is intended for practical men in inspection who wish to keep up to date on developments. The 212-page second edition, list price $4, uses non-technical language and a minimum of mathematics to cover inspection fundamentals, sampling plans, control charts, analysis of variations, statistical determination of tolerances, administrative procedures and controls. Industrial Press, 148 Lafayette St., Dept. IEN, New York 13, N. Y.

If you write maker identify as IEN - 8616

Management—Book answers 600 questions on how to develop management ability

The 600 questions answered in new book, "Developing Management Ability", are grouped into five major topics. These are introduction, methods of development, types of development, organizing and operating development, evaluation. They are the outgrowth of several thousand questions asked over the past four years. The 460-page book, list price $7, is by Planty and Freeston. Ronald Press Co., 15 E. 26th St., Dept. IEN, New York 10, N. Y.

If you write maker identify as IEN - 8617

Metals—Cardboard slide selector gives specifications on design-strengthened metal

Twenty-six patterns of the company's Rigid-Tex metals are reproduced around the circumference of new pocket-size Pattern Selector. A slide is moved so the desired pattern shows inside a window. Figures appear at a second window for pattern number, width, thickness, depth. An arrow indicates direction of width for each pattern. Application suggestions are printed on back. Ridigized Metals Corp., 664 Ohio St., Dept. IEN, Buffalo 2, N. Y.

If you write maker identify as IEN - 8618

New Products—List of manufacturers looking for new products to make, in book

Six hundred companies in 24 major industrial fields are listed in 1954 edition of the Green Leaf Guide. These companies are interested in new patentable ideas. The 64-page book, list price $2, circulates the information to patent attorneys and inventors. Manufacturers can purchase space. Green Leaf Guide, Box 752, Dept. IEN, Port Washington, N. Y.

If you write maker identify as IEN - 8619

Presses—How to select one by application is described in new pocket booklet

Major factors, type of stamping operation and type of press construction are stated in new 16-page booklet, "How to Choose the Right Press". The information on construction goes into frame design, power transmitting mechanism, mechanical and hydraulic types, important equipment. One section tells how to determine capacity. Interstate Machinery Co., 1465 W. Pershing Road, Dept. IEN, Chicago 9, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8620

COMPLETE PROTECTION AGAINST ATHLETE'S FOOT at moderate cost!

IMPROVED ALTA-CO POWDER

Refinements and improvements now make ALTA-CO more quickly soluble, more agreeable generally and better to handle. Dissolved economically in water for the all-important foot bath, ALTA-CO kills *in less than a minute* all different species of fungi commonly found in Athlete's Foot. Non-Irritating; harmless to towels.

ALTA-CO FOOT POWDER
For dusting feet after shower or other exposure to moisture.

H. D. FUNGICIDE FLOOR WASH
Diluted 1 to 300 in water, this powerful wash provides additional protection against Athlete's Foot on surfaces where fungi are commonly found.

Ask your DOLGE SERVICE MAN about money-saving offer on the DOLGE FOOT TUB.

For FREE SANITARY SURVEY of your premises consult your DOLGE SERVICE MAN

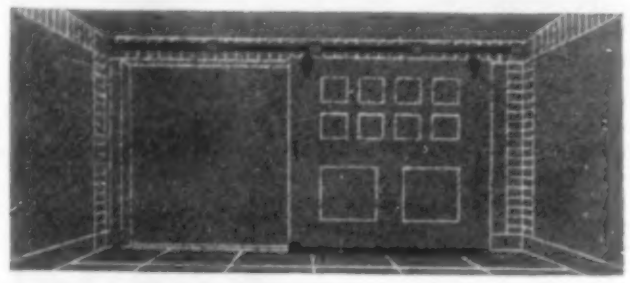
dependable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 8621

COBURN

SLIDING DOOR HARDWARE

smooth, easy operation . . . trouble-free life for both new and remodeling jobs



For additional information, write to Sales & Engineering, 56 Sterling Street, Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

2007

COBURN PRODUCTS
PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION
CF&I

If you write maker identify as IEN - 8622

NUMBERALL
CUTS THE COST OF STAMPING NUMBERS

MODEL NO. 408

Numbering and Lettering press
Mono Wheel Automatic Spacer

Designed for the purpose of impressing Letters and Numbers in all kinds of Name Plates and Flat Metal Parts. The Dials 3¾" Diameter are made of Special High Grade Tool Steel, scientifically hardened and tempered. The Characters are carefully engraved and make clear cut impressions of uniform depth. Standard Dials are engraved with 40 characters. Character Heights as follows: 1/16, 3/32, 1/8, 5/32, 3/16". Different size Dials are interchangeable. Carriage Table advances one space with each impression of the Dial, like a typewriter, doing rapid work, even spacing and perfect alignment. Plates up to 5" wide and 6" long can be stamped, but can furnish a longer Table and Rack if required. Depth of impressions is adjustable by a screw on bottom of machine. A direct sight gauge is provided to facilitate stamping in the proper place.

Specialists in making devices for stamping details into Nameplates, such as Automatic and Non-Automatic Numbering Machines, Type and Type Holders, and Chases, etc.; also Presses.

MODEL No. 408

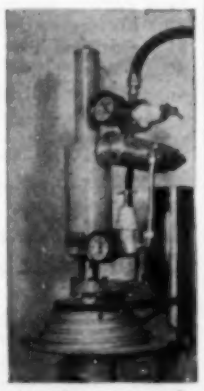
Bulletin IEN.-408 on request.

NUMBERALL STAMP & TOOL CO.
HUGUENOT PARK STATEN ISLAND 12, N. Y.

If you write maker identify as IEN - 8623

ROTAFEED AUTOMATIC POWER FEED

makes 2,000,000 DRILL PRESS FEEDS obsolete!



Attaching directly to the spindle, ROTAFEED produces more holes per hour than any other type of feed. Lower air consumption further "sweetens" the profit picture. Increase your profits by installing or replacing with ROTAFEED, the world's fastest feed for drill presses.

Completely automatic, the ROTAFEED package includes solenoid valve, pressure regulators and gauges, filter-lube unit, air hose with fittings and electrical controls

A Pneuma-Draulic engineer is ready to assist you.

THE PNEUMA-DRAULIC COMPANY
Box 666, Detroit 6, Mich.

If you write maker identify as IEN - 8624

BULKY, AWKWARD, HEAVY LOADS

Handled

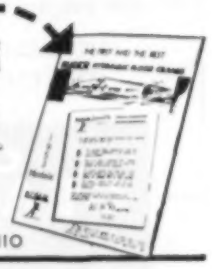
· EASILY
· SAFELY
· QUICKLY
for LESS

2 TON CAPACITY

SUBSTITUTE FOR AN ELEPHANT ®

GET THIS BOOK

Gives all the facts about Ruger's complete line of hydraulic floor and truck mounted cranes, capacities 1000 to 6000 lbs.



RUGER CRANES

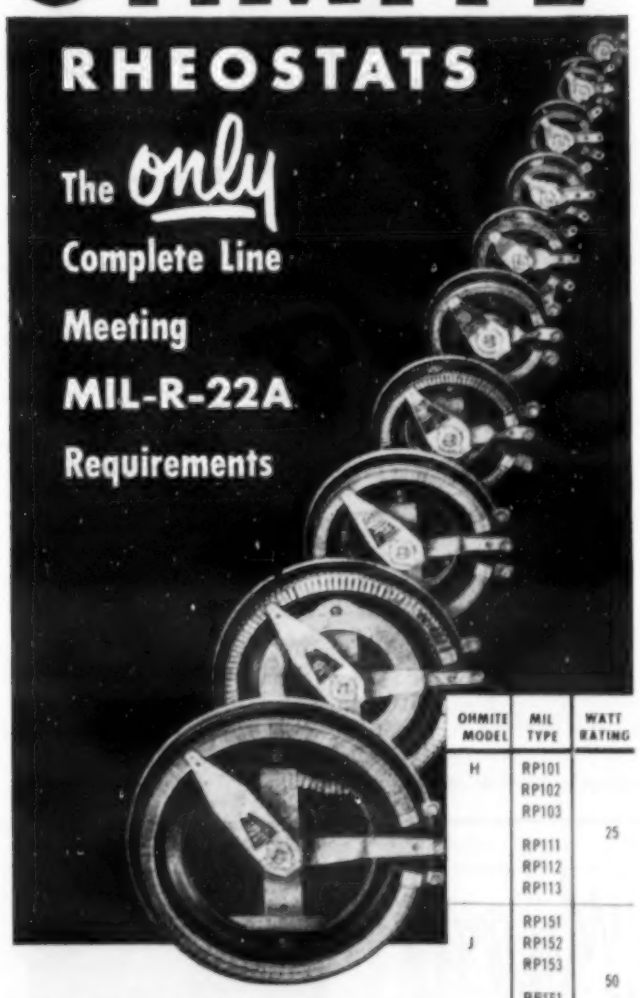
613 West Fourth St UHRICHSVILLE, OHIO

If you write maker identify as IEN - 8625

OHMITE®

RHEOSTATS

The *only* Complete Line Meeting MIL-R-22A Requirements



OHMITE MODEL	MIL TYPE	WATT RATING
H	RP101 RP102 RP103 RP111 RP112 RP113	25
J	RP151 RP152 RP153 RP161 RP162 RP163	50
G	RP201 RP202 RP203	75
K	RP251 RP252 RP253	100
L	RP301 RP302 RP303	150
P	RP351	225
N	RP401	300
R	RP451	500
T	RP501	750
U	RP551	1000

Ohmite can furnish rheostats in *every* one of the 26 type designations to meet the requirements of MIL-R-22A.

By standardizing on Ohmite rheostats, you can cover all of your needs for both civilian and government jobs and, at the same time, give your customers the utmost in rheostat performance.

Ohmite rheostats have proved their dependability in meeting the severe requirements of MIL-R-22A . . . the 5-hour vibration test, 50-hour salt-spray corrosion test, 150-hour 95% humidity electrolysis test . . . and others. Their all-ceramic construction, uniform windings locked in place by vitreous enamel, and smoothly gliding metal-graphite brush insure close control and years of trouble-free service.

Write on Company Letterhead for Catalog No. 40.

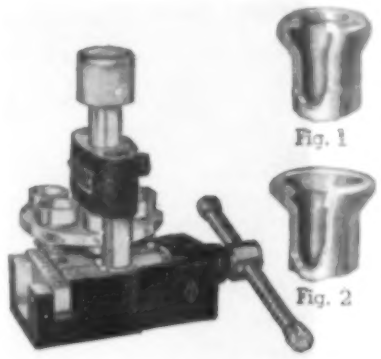
OHMITE MANUFACTURING CO.
3619 Howard St., Skokie, Illinois
(Suburb of Chicago)

OHMITE® RHEOSTATS RESISTORS TAP SWITCHES

If you write maker identify as IEN - 8627

Flaring - Hand impact tool forms double flare on metal tube end

Source: IMPERIAL BRASS MFG. COMPANY
1200 W. Harrison St., Dept. IEN, Chicago 7, Ill.



Catalog 3011-A

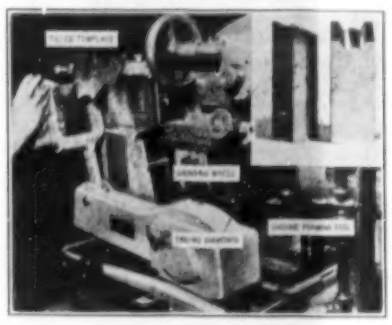
Number 250-F, to make a double flare at 45 deg., and Number 255-F, to make the same type of flare at 37 deg., have been added to the company's line of tube forming tools. Both mount die blocks in a slide in the base where they are held in place by a hinged latch and are clamped by a lever operated screw. A tube is inserted in the opening corresponding to its external diameter and is clamped in place. A plate, carrying a set of cupping heads, is rotated to correct position above the tool and the plunger at the top of the assembly is struck with a hammer.

The plunger head terminates in a cone facing downward to engage the cup. This operation forms the tube end into a shape as shown in Figure 1. The next operation is to rotate the cup plate out of position and to strike the plunger again so the cone end enters the tube and forms the inward facing lip down into a double flare as shown in Figure 2. The 45-deg. tool will handle tubes measuring 3/16, 1/4, 5/16, 3/8 and 1/2 in. in outside diameter. The 37-deg. tool will handle the same sizes to 3/8 inch. Tubes made of soft copper, aluminum, soft steel, such as Bundy and GM, can be flared without splitting.

If you write maker identify as IEN - 8628

Grinding - Dresser attachment forms wheel to a magnified template

Source: PRATT & WHITNEY
Charter Oak Blvd., Dept. IEN, W. Hartford 1, Conn.



Bulletin, "Diaform"

Cutter relief angle can be dressed into a grinding wheel with this new Series-R relief angle compensator attachment in the company's Diaform line of template guided wheel dressers. The template mounts on a carrier with graduated scales. The carrier is tilted to the included angle of both the end relief and top rake and is swiveled out to the desired side relief.

The wheel is dressed by traversing the tracing bar over the profile of the template. The path of the tracer is transmitted through the pantograph mechanism at a 5 or 10 to 1 reduction ratio to the truing diamonds positioned beneath the wheel. The new attachment represents further development of the equipment previously described IEN-5804-54.

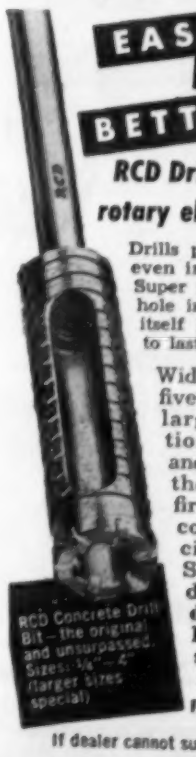
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8629

DRILL CONCRETE

EASIER! FASTER! BETTER!

RCD Drill Bit for use with rotary electric or air drills



Drills perfect, precision holes even in *reinforced* concrete. Super fast and easy (6" deep hole in 1 minute!) Pays for itself in time-savings. Made to last.

Widely used for the past five years by most of the largest U. S. corporations, manufacturers, and utilities, as well as thousands of smaller firms, installation men, contractors, electricians, plumbers, etc. Superior concrete drilling plus longer drill bit life due to FREE factory resharpening service keeps them sold.

Personalized guarantee given to every RCD Drill Bit user

If dealer cannot supply (or service), buy direct.

Send for illustrated literature and price list

ROTARY CONCRETE DRILL CO.
650 S. Arroyo Parkway, Pasadena 1, Calif.

If you write maker identify as IEN - 8630

HEAVY DUTY INDUSTRIAL TRAILERS

Standard or Special CAPACITIES TO 60,000 lbs.

A-620 Low deck, 5th wheel steer trailer.

A-443 Die handling trailer.

A-520
Medium height, 5th wheel steer trailer.

MERCURY

In addition to the standard "Type A-310" castor steer trailer, MERCURY offers a complete line of heavy duty trailers in castor steer, fifth wheel steer or four wheel steer designs in capacities to 60,000 lbs. As the world's largest producer of industrial trailers, Mercury is well equipped to fill your specific requirements. For complete information request Bulletins A-100 and A-999.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street, Chicago 9, Ill.

If you write maker identify as IEN - 8631

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as IEN - 8632

PLATECOIL

(REPLACE PIPE COILS)

cost less than fabricating pipe coils in your own plant

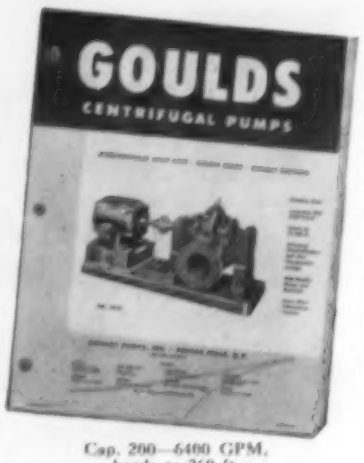
You can buy Platecoils for less money than it costs to fabricate pipe coils in your own plant. You also save critical steel because Platecoils require less than 1/2 the steel used in pipe coils of the same surface area. Installation takes far less time as Platecoils are mounted on simple hangers instead of the complicated racks needed for pipe coils. They take 50% less space.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL Division **Tranter Mfg. Inc.** LANSING 4, MICHIGAN

If you write maker identify as **IEN - 8633**

12 pages of facts about a NEW LINE of 19 pumps



Cap. 200—6400 GPM, heads to 260 ft.

Here's good news for pump buyers. The new Goulds Bulletin No. 721.6 gives you a host of information on the *extra* design features that are *standard* on Goulds new Fig. 3405 pumps.

Included are stuffing box brushings, steel-impeller keys, Teflon water seal rings—to mention a few.

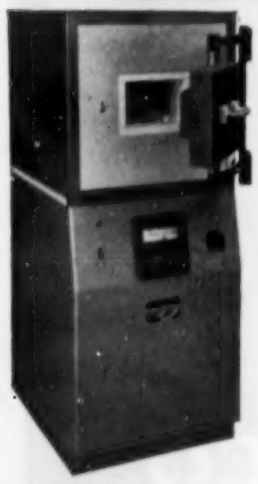
This pump construction requires only three shaft and rotating parts assemblies (exclusive of wearing rings and impellers) to provide for 19 pump sizes.

But, get all the facts on how you can save on down time, maintenance costs and spare parts inventories. Write for Bulletin 721.6 today.

Goulds PUMPS INC. Seneca Falls New York

If you write maker identify as **IEN - 8634**

A NEW FURNACE



WITH A 2 YEAR ELEMENT GUARANTEE

Range: 3,000° F. to 2,000° F.

HUPPERT Model "K-R"

Electric Heat Treating

FURNACE

For Precision Production and Lab. Work

• This new Huppert Model "K-R" is ruggedly constructed to meet severest production requirements, yet offers a high degree of accuracy for laboratory experimentation. Complete with transformer, contactor, switch box, Huppert Infitrol and indicating electronic temperature controller. All connections factory installed. Shipped ready for operation.

• Write today for literature on complete line of Huppert furnaces and ovens in floor and table models.

Model No.	Inside Dimensions Wide	High	Deep	K.W.	Prices—Single Phase 220 volt	440 volt
K-R 668	6"	6"	9"	2	$ 710.00	$ 770.00
K-R 6613	6"	6"	13"	3.5	800.00	860.00
K-R 8613	8"	6"	13"	5	990.00	1,050.00
K-R 10813	10"	8"	13"	8	1,240.00	1,370.00
K-R 10818	10"	8"	18"	12	1,450.00	1,580.00

K. H. HUPPERT CO. 4856 Cottage Grove Avenue Chicago 37, Illinois

• *Manufacturers of Electric Furnaces and Ovens* •

If you write maker identify as **IEN - 8635**

Gary GRATING

with the HEXAGONAL CROSS BARS Resistance Welded

FREE SAMPLE Write for paper weight size sample and catalog IN-84.

Standard Steel Spring Division

ROCKWELL SPRING AND AXLE CO.

4045 East Seventh Avenue • Gary, Indiana

USEFUL INFORMATION —*Continued*

If you write maker identify as **IEN - 8636**

Plastics—Developments and uses of Mylar reviewed in new information issued at intervals

"New Developments in Mylar" titles information booklet on the company's polyester film, to be published at intervals as interesting applications come along. Issue No. 1 covers general properties, tells about a new production plan about to be completed, applications in electrical insulation, recording tapes, a crashproof kite, drum liner for corrosive chemicals. Your name will be added to the list to receive the new publication. E. I. du Pont de Nemours & Co., 2518 Nemours Bldg., Dept. IEN, Wilmington 98, Del.

If you write maker identify as **IEN - 8637**

Plywood—Information booklet details types, grades, properties to help selection

1954 Catalog is a 20-page booklet of basic information for specifiers and users of fir plywood. It describes standard stock sizes and grades of interior and exterior-type plywood, includes data tables on nail bearing loads, sound insulation, bending radii, strength, vapor transmission. It describes special products, finishing methods, application suggestions, includes a note on design to resist earthquakes. Douglas Fir Plywood Assoc., 1119 "A" St., Dept. IEN, Tacoma 2, Wash.

If you write maker identify as **IEN - 8638**

Protecting—Industrial health activities, research and service, in new 24-page booklet

"Can We Help You?" tells about the activities of the Institute of Industrial Health in industrial medicine, occupational health, industrial hygiene. It shows what is being done in research for healthy workers, for skin health, better hearing and better sight, healthful work places. It describes service facilities, training programs, information services available. University of Michigan Medical Center, 1630 University Hospital, Ann Arbor, Mich.

If you write maker identify as **IEN - 8639**

Pumps—Selection of hydraulic oil described in booklet with suggestions on use

Importance of using the correct hydraulic oil in equipment made by the company is emphasized at the start of new 16-page Bulletin 45. Information follows on desirable properties, physical specifications, factors affecting hydraulic-oil performance, procedure to assure suitable oil condition, operating notes, care of equipment. Denison Engineering Co., 1160 Dublin Road, Dept. IEN, Columbus 16, Ohio.

If you write maker identify as **IEN - 8640**

Rock Drilling—Sharpening instructions for carbide mining tools in new 20-page bulletin

Pictures show close-up views of recommended grinding practice in new 20-page Manual CM-121. Text tells when and how to sharpen cutter bits, finger bits, roof bolt drills, auger drills tipped with the company's cemented carbide. Recommendations are given on grinding machines and wheels. Carboloy Dept., General Electric Co., 11167 E. 8-Mile Rd., Dept. IEN, Detroit 32, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8641**

DARNELL CASTERS & E-Z ROLL WHEELS

ECONOMY and EFFICIENCY

STRING GUARDS... Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

RUST-PROOFED... by the Udylite process, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

RUBBER TREADS... a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

LUBRICATION... all swivel and wheel bearings are factory packed with a high quality grease. Zerk fittings are provided for easy lubrication.

Write for Free Darnell Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as **IEN - 8642**

FREE—Illustrated catalog on a better method of grinding conical—spherical—cylindrical surfaces

Here are valuable details on the Geargrind Universal Oscillating Grinder. Whether you require production economy or tool room accuracy on internal and external grinding, you'll save time and money with this versatile and rugged grinder.

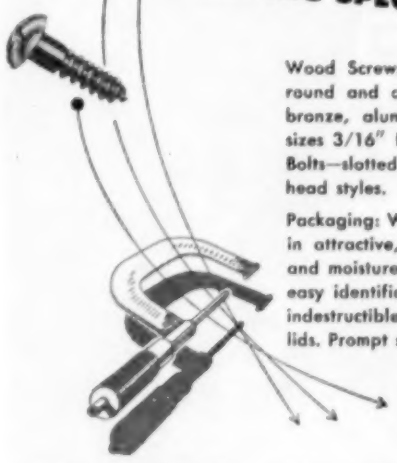
This catalog gives complete information on types of work performed, methods of application and specifications. Write today—we will be happy to send you a copy.

THE GEARGRINDING MACHINE CO.
3923 Christopher, Detroit 11, Michigan

GEARGRIND Detroit

If you write maker identify as **IEN - 8643**

MADE TO EXACTING SPECIFICATIONS



Wood Screws—Phillips or Slotted; flat, round and oval in steel, brass, silicon bronze, aluminum and stainless steel; sizes 3/16" No. 0 to 7" No. 30. Stove Bolts—slotted steel in round and flat head styles.

Packaging: Wood screws and stove bolts in attractive, new, confusion-proof, soil and moisture resistant green boxes with easy identification label. Bulk screws in indestructible steel cans with replaceable lids. Prompt service.

Samples and attractive new wood screw catalogue, free upon request. Box 1360-E

SOUTHERN SCREW COMPANY
STATESVILLE, NORTH CAROLINA
WOOD SCREWS STOVE BOLTS

Factory Warehouses:
New York, N. Y. • Chicago, Ill. • Los Angeles, Calif. • Dallas, Texas

If you write maker identify as **IEN - 8644**

Why use a Koil-Kradle?

IMPROVED AUTOMATION FOR PUNCH PRESSES, SHEARS, SLITTERS, ROLL FORMERS and all similar machines fabricating from any coiled stock.

benchmaster Koil-Kradle with VARI-LOOP Control

KOIL-KRADLE makes available a *controlled length of slack loop* from which any machine can draw ...shuts off automatically when loop exceeds machine requirements.

KOIL-KRADLE CUTS COSTS! Uses much larger coils; lowers stock costs; eliminates frequent reloading. This means more press time, more production, more profit.

LICKS LOADING PROBLEMS—No heavy lifting, no time-consuming problems... simply roll coil up ramp into cradle position.

SAVES VALUABLE FLOOR SPACE—No need for 8 to 10 feet of wasted space...KOIL-KRADLE butts against any machine it supplies. Compact, occupies only a few feet of floor space itself!

Write for free circular or see your Benchmaster dealer.

MANY SIZES: Capacities from 1/2 ton to 8 tons, coil dias. 36" to 60", stock widths 10" to 48".

Benchmaster Manufacturing Co. 1835 W. Rosecrans Ave. Gardena, California

benchmaster World's largest manufacturer of small punch presses and mills.

If you write maker identify as IEN - 8645

CUT COSTS

with

ALLEN *Punch Press*

1-Ton Power Bench Type

$97.50 less Motor

- Powerful
- Dependable
- Economical

FREE CIRCULAR

30-Day Money-Back Guarantee

Order TODAY.

Price $97.50 F.O.B., Clinton, Mo. (Includes motor bracket, V-belt, motor pulley, less motor)

For light work — stamping, forming, riveting—metal, fiber or other material.

Overall height 17½" . . . Base size 8½" x 8½" . . . Die bed 5½" x 8½" . . . Ram face 1½" x 3½" . . . Ram stroke ¾" . . . positive ¾" ram adjustment . . . sturdy, single pin, non-repeat hand lever clutch . . . V-belt drive . . . weight 105 lbs.

Requires only ¼ to ½ H.P. motor.

The machine of a thousand uses! Adequate for many types of work now done on large presses at greater expense.

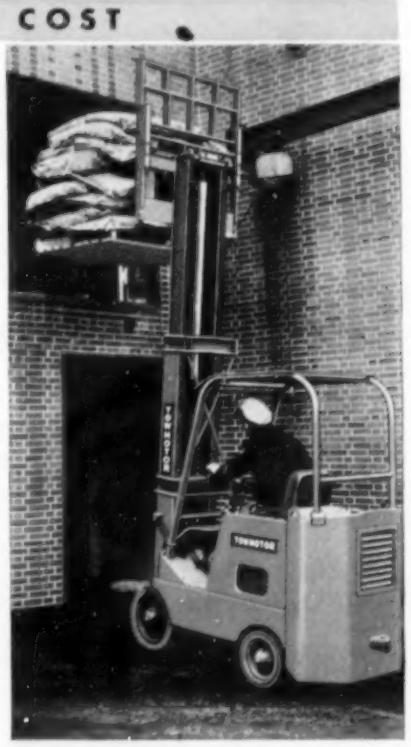
ALVA F. ALLEN • Dept. IE • CLINTON, MO.

If you write maker identify as IEN - 8646

CUTTING COST

HIGH STACKING

for down-to-earth savings!



Savings are being made by a well-known brewer with Towmotor Fork Lift Trucks. High stacking increased storage 32% and truck loading is 28 times faster. Such savings are yours with Towmotor **Mass Handling.* Have a Towmotor *Mass Handling Engineer* analyze your material handling needs, or write for, "How To Catch Man-Hour Thieves." TOWMOTOR CORPORATION, Div. 2608, 1226 East 152nd Street, Cleveland 10, Ohio.

**TOWMOTOR MASS HANDLING—Moving more units faster, at lowest cost!*

TOWMOTOR — THE ONE-MAN-GANG ®

FORK LIFT TRUCKS and TRACTORS

SINCE 1919

IT'S HARD TO COMPETE WITH A TOWMOTOR EQUIPPED PLANT!

If you write maker identify as IEN - 8647

When it has to Run for Years and Years

WITHOUT FAILURE

MAKE IT A LEIMAN VACUUM AND PRESSURE PUMP

Leiman users say this:

"Almost continuous operation, 24 hours a day for 21 years"

"Using Leiman pumps on 350 machines. No pump has given a moment's trouble"

4-WING TYPE. Vacuums to 20"; pressures to 15 lbs.; displacement to 162 cfm. Wings take up their own wear, insure positive pressure or vacuum.

2-WING TYPE. Vacuums to 29.9"; pressures to 25 lbs.; displacement to 40.8 cfm. Automatic wing adjuster forces steel blades to meet cylinder wall, no sticking.

Write for 16-page catalog and blueprints of typical applications on Leiman rotary positive pumps—choice of industry since 1889.

SEE OUR CATALOG IN SWEET'S FILE

LEIMAN BROS., INC.

166 Christie Street, Newark 5, N. J.

If you write maker identify as IEN - 8648

Straightening - And cutoff machine for metal tube measuring ¼ to 1 inch

Source: WALTER P. HILL INCORPORATED
22183 Telegraph Road, Dept. IEN, Detroit 19, Mich.

Cut length to 6 feet

Ferrous or non-ferrous tube, in coils to 24 in. in diameter, is mounted on a vertical spindle reel at the side of this new machine. The tube is led between feed and straightening rolls to a cut-off head. The head contains a manually controlled hydraulically fed cutoff saw for non-ferrous tubing or an abrasive wheel to cut ferrous tube.

The tube is fed through the rolls and against an adjustable stop by a hand wheel at the front of the machine. Then a hydraulic valve is operated to clamp the tube and advance the saw carriage. The cut off piece falls into a rack and the machine is ready to advance the tube again by turning the hand wheel.

Hydraulic pressure is supplied at 500 lb. by a 3½-gpm. motor driven pump. It takes oil from a 5-gal. tank and delivers to the 2-in. saw carriage feed cylinder. A 3-hp. motor, operating at 1,700 rpm., drives the ball bearing saw spindle by belt connection. Feed rolls are interchangeable and are supplied in sizes specified by the user.

If you write maker identify as IEN - 8649

Gage - Pneumatic head actuates "over" and "under" instrument

Source: FEDERAL PRODUCTS CORP.
1144 Eddy St., Dept. IEN, Providence 1, R. I.

Suited for piece inspection

AirProbe is a new universal gaging head for use with the company's Dimensionair indicating instrument to read variation over and under a predetermined dimension. The spindle-like unit assembles in a fixture and connects by tube to the Dimensionair. It is set to zero on the graduated scale of the indicator and then the gage is adjusted as a dial indicator would be.

The head provides actual calibrated readings. Available ranges are 0.003, 0.006, 0.015, and 0.030 inch. Approach travel measures 0.031 inch. Spindle travel is 0.140 inch. Over-travel is between 0.070 and 0.100 inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8650

MAGNE-BLOX

SPEED SURFACE GRINDING SET-UPS WITH

MAGNE-BLOX

Laminated Parallels
V-Blocks & Angle Irons

- Grind Work Square
- Grind Work Parallel
- Hold Round Pieces
- Save your Magnetic Chucks
- Eliminate Clamps
- Eliminate Holding Devices

UNIVERSAL SET Code GANBO In Case $22.25

Write for Folder—Code GINXA

RADIUS DRESSER

SPEED UP PRODUCTION

with the

"Little Wonder"

RADIUS DRESSER

Dressing and Shaping Grinding Wheels up to 1" Convex or Concave Without Diamond - Code GANLE $39.50

Natural Pointed 1/3 K. Diamond $6.50

Better Support by using Swinging Arm pivoted on Lapped Centers, eliminating Vibration and giving Better Finish.

Write for Illustrated Folder—Code GINYY

GEORGE SCHERR CO., Inc.

COMPLETE LINE OF PRECISION INSTRUMENTS

200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as IEN - 8651

Stop stray metal

Protect purity of product

HERE'S THE SURE WAY to stop packages containing stray metal from reaching your customers . . . Allis-Chalmers Electronic Metal Detectors!

Installed at raw material, processing, or packaging stages, these units detect stray metal — magnetic or nonmagnetic — no matter how deeply embedded.

Units fit production setups. Conveyor belts from packaging machines can carry packages through detector aperture at 15 to 600 fpm. Maintenance and operating costs are small.

Get complete information! Call your nearby Allis-Chalmers office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-4371

ALLIS-CHALMERS

If you write maker identify as IEN - 8652

HIGHER SPEEDS! FASTER GRINDING!

kipp AIR GRINDERS

MODEL JA
50,000 R.P.M.
$42.00
IN U.S.A.

Weight 12 ounces; length 6¾ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

The RPM's stay up while grinding...not only when the grinder runs idle. That means better work —longer wheel life.

High speed grinding with small wheels was a Madison-Kipp development of the late twenties. It was born out of a pressing need in our tool room. Because tool room grinding problems are universal, we believe it will pay you to utilize Kipp grinders in your tool room as generally as we do in our own.

kipp

MADISON-KIPP CORPORATION

224 Waubesa St. • Madison 10, Wis., U.S.A.

If you write maker identify as IEN - 8653

Over 85% of the torque wrenches used in industry are

Sturtevant TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch grams
...inch ounces
...inch pounds
...foot pounds

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 8654

If you write maker identify as IEN - 8655

MOSINEE • Sulphate Towels
PREP-TOWLS • ZIP-TOWLS • TRIM-TOWLS • TURN-TOWLS • ROLTOWLS

If you write maker identify as IEN - 8656

CHOOSE FROM 115 MODELS TO MEET YOUR EXACT NEEDS!

Only Ballymore ROLL-OR-GRIP all-welded-steel ladders assure you of *just* the right portable safety stair for each need. A standard size range from one to twelve steps; a choice of three safety treads (expanded steel lath, steel grip-strut, or rubber-clad steel plate); optional hinged shelves or removable baskets; and a wide choice of widths within each size—these *extras* add convenience to the superior safety features built into every Ballymore — the original — safety-step ladder.

BALLYMORE Safety-Step LADDERS

Factory-trained representatives in principal cities

To: BALLYMORE COMPANY, WAYNE 4, PA.
( ) Forward free catalog of Safety-Step Ladders.
( ) Have representative call to survey my safety-ladder needs.
Name _____ Title _____
Company _____
Address _____

USEFUL INFORMATION—Concluded

If you write maker identify as IEN - 8657

Stampings—Suggestions on design of stamped metal parts are presented in booklet

"Facts about Stampings" titles revised 32-page booklet that lists at 50 cents. It is intended to assist in design or redesign of stamped metal parts, covers such topics as flanges, holes, layout, radii, slots, gage inspection, tolerances, press selection, checklist for prints, suggested sales conditions. Pressed Metal Institute, 2860 E. 130th St., Dept. IEN, Cleveland 20, Ohio.

If you write maker identify as IEN - 8658

Lift Trucks—Circular cardboard selector shows aisle space for six electric fork lift trucks

"Space Wheel" is new circular selector, 8½ in. in diameter, offered on request to help you check floor space requirements for your present fork trucks with those of six Lewis-Shepard trucks. It assumes you have 1000 lineal feet of fork truck aisles, that you are using 48 by 48-in. pallets and that you require 12-ft. aisles to stack at right angles. First you set the selector at the model from 1,500 to 5,000 pounds. Then you can read number of square feet required for aisles and the differences in floor space and cubic storage space available. Lewis-Shepard Products Inc., 125 Walnut St., Dept. IEN, Watertown 72, Mass.

If you write maker identify as IEN - 8659

Vibration Isolating—Technical bulletins in a series on vibration and shock isolation units

New series of data sheets are issued at intervals to keep you up to date on developments in isolating mounts. Title is "Vibration and Shock Control Trends". Each sheet covers a specific product as to design and construction points, application suggestions, ranges and applicable military specifications. Your name will be added to the list upon request. Robinson Aviation, Inc., Teterboro Airport, Dept. IEN, Teterboro, N. J.

If you write maker identify as IEN - 8660

Water Treating—Operating description on how demineralizing works is given in bulletin

Principles of demineralizing by ion exchange are reviewed in new 24-page Bulletin WC-111. Schematic diagrams show operation of three basic types of equipment. Schematic summaries are given on six other types of demineralizers with notes on advantages. Text covers cation and anion exchange resins, degasification, tank design, estimated operating cost. Graver Water Conditioning Co., 216 W. 14th St., Dept. IEN, New York 11, N. Y.

If you write maker identify as IEN - 8661

Water Treating—Pocket data book presents reference information on water treating

New edition of the company's Data Book 2478-A is offered on request to practicing engineers and to individuals who work with water-treating problems. It is a bound pocket-size book of 108 pages, copyright 1953, just released. It tabulates information on hydraulics, water impurities, chemical conversions, dosages, water-treating chemicals, methods, specific gravities, sample calculations, weights and measures, four-place logarithms. Permutit Co., 330 W. 42nd St., Dept. IEN, New York 36, N. Y.

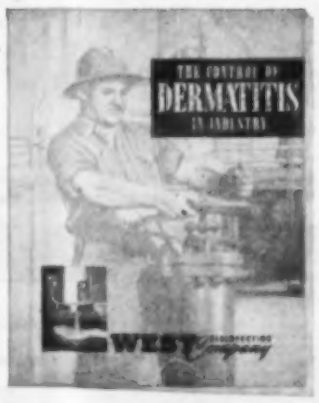
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8662

A Paid News Advertisement by West Disinfecting Co.

DERMATITIS CONTROL MANUAL

outlines industrial skin care methods

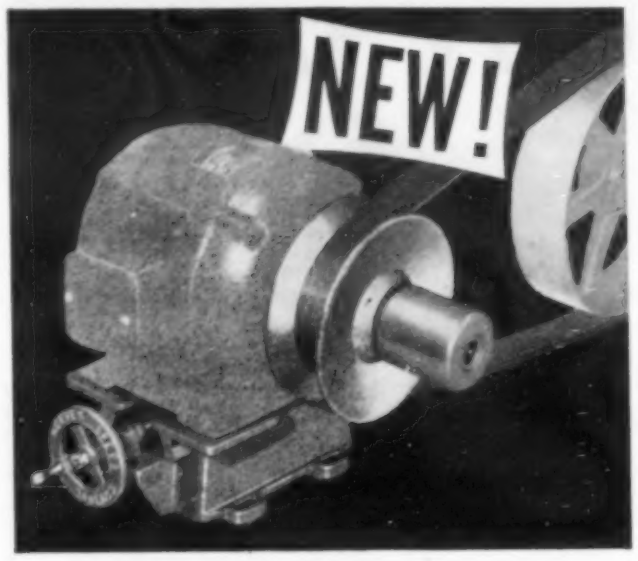


This free 28-page booklet is a complete, up-to-the-minute handbook on industrial dermatitis control. It treats the subject in considerable detail, yet is written in nontechnical style for easy reading by laymen as well as doctors and nurses. Anyone interested in reducing the costs of medical care, compensation, absenteeism, and the other losses dermatitis can cause, will find this booklet extremely helpful.

The booklet describes working conditions in 19 different industries, the hazards these conditions involve, the type of dermatitis common in each set of conditions, and recommended preventive measures. Condensed into convenient reference form are the experience and know-how gathered over many years by field workers and laboratory technicians of the West Disinfecting Company.

The book gains extra validity and value from West's daily contact with new industrial processes, chemicals, and jobs that are constantly complicating the dermatitis picture. This is essential reading which can lead to higher morale, increased production, and lower costs. Published by the West Disinfecting Company, Dept. 13, 42-16 West Street, Long Island City 1, N. Y.

If you write maker identify as IEN - 8663



REEVES *Completely new redesigned* MOTOR PULLEYS *Smaller units—More HP!*

Check all these new REEVES features

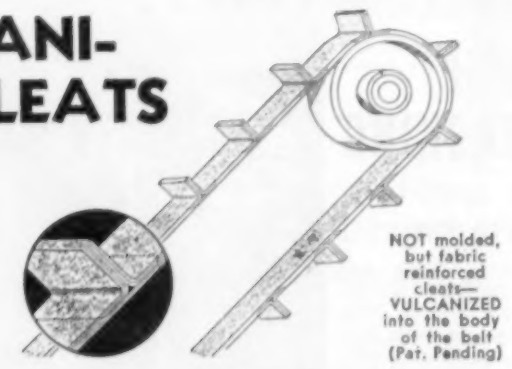
1. New, smaller disc assemblies—engineered for new or old NEMA Motors.
2. New spiral-groove lubrication for rust-free, trouble-free service.
3. One-point lubrication when unit is stopped or *in operation.*
4. Superior base construction for greater rigidity and strength, reduced vibration and noise.

Write today for complete details. Specify IN10a-V545

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write maker identify as IEN - 8664

SANI-CLEATS



Solves your cleated belt problems with 47 types of belting to handle a variety of products.
Promotes Sanitation as there are no gaps or crevices. No bolts—rivets or metal.

Highly flexible SANI-CLEATS can bend parallel to belt. Can be made stiff or flexible as desired.

Any height, width and spacing with SANI-CLEATS

Write for literature

•

A. J. SPARKS & CO.
863 Grandville Ave., S. W.
Grand Rapids, Michigan

SPARKS BELTING

If you write maker identify as IEN - 8665

INTERNATIONAL RECTIFIER CORPORATION

1521 E. Grand Ave., El Segundo, Calif • Phone: ORegon 8-6281
CHICAGO: 205 W. Wacker Drive • Phone: Franklin 2-3889
NEW YORK: 501 Madison Avenue • Phone: Plaza 5-8665

If you write maker identify as IEN - 8666

For A New TWIST In Production Stud Setting And Driving Threaded Inserts . . . USE TITAN TOOLS!

Automatic Self-Opening Stud Driver — 100 Series

Featuring New Collapsible Type Trip Gage!

Automatic take-up for wear on jaws. Affords accurate maintenance of projection heights. Inexpensive method of clutch renewal gives double wear at half the cost.

Titan "Roll Grip"

Combination Stud Driver and Puller

Incorporates roll action to grip as little as ½ in. of unthreaded body of stud. Made in standard sizes from 3/16 to 3 in. inclusive.

"Bull Dog" Stud Driver

Designed for Use With Impact Wrenches

Built for rugged use on heavy engines. Equipped with Titan Design, Loose Pressure Plunger. Definitely stands up under vibration encountered when using an impact wrench for motive power.

Titan Bushing Driver

For Driving Threaded Inserts

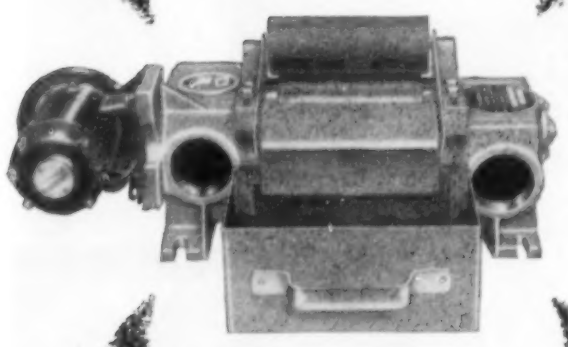
Automatic positioning of threaded inserts to proper depth below face of casting. Ball bearing pressure plate prevents backing the insert out after driving. Sizes for all inserts in common use.

WRITE FOR LITERATURE TODAY

TITAN TOOL CO.
Production Tools
52 Main St., Fairview (Erie County), Pa.

If you write maker identify as IEN - 8667

new!
Houdaille MAGNETIC SEPARATOR



For Automatic, Low-Cost Removal of Ferrous Metallic Particles from Coolants and Cutting Oils
used in
GRINDERS • MILLING MACHINES • GEAR SHAPERS
DRILLING MACHINES • HONING MACHINES
BROACHING MACHINES
and many others

NOW . . . a completely new Magnetic Separator designed to remove ferrous metallic particles and sludge from liquid coolants, mineral oils and soluble oil solutions used in all types of metal finishing operations. Automatic, continuous cleaning of coolants with the Houdaille Magnetic Separator provides:

- **Increased Production**
- **Longer Wheel & Tool Life**
- **Better Finishes with Fewer Rejects**
- **Greater Safe-Use Life of Oil or Coolant**
- **Lower Operating and Maintenance Costs**

IMPORTANT FEATURES:

EASY INSTALLATION ON MACHINE TOOL SUMP
Flexible design permits choice of three inlets and two outlets. Small, compact unit requires little or no extra floor space.

360° CONSTANT MAGNETIC ATTRACTION
Permanent ring magnets enclosed in revolving cylinder provide 360° of magnetic attraction. Evenly distributed . . . no spottiness.

ECONOMICAL, TROUBLE-FREE OPERATION
Separator uses 1/70 hp. gear head motor (TENV). Features smooth, automatic operation. Nothing to lubricate, nothing to get out of order.

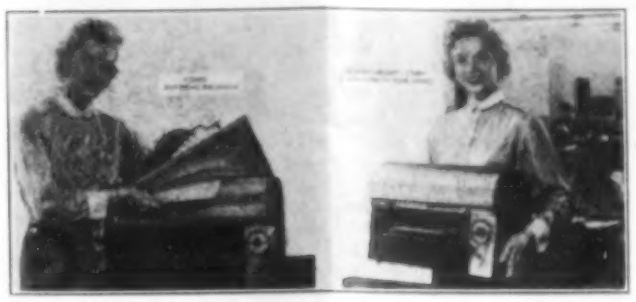
Write today for Equipment Bulletin giving full details.

HONAN-CRANE CORP.
802 Wabash Ave., Lebanon, Ind.
a subsidiary of
HOUDAILLE-HERSHEY CORP.

If you write maker identify as IEN - 8669

Printing - Photocopy machine, exposes, develops and delivers print

Source: AMERICAN PHOTOCOPY EQUIPMENT CO.
1920 W. Peterson Ave., Dept. IEN, Chicago 26, Ill.



Move it anywhere

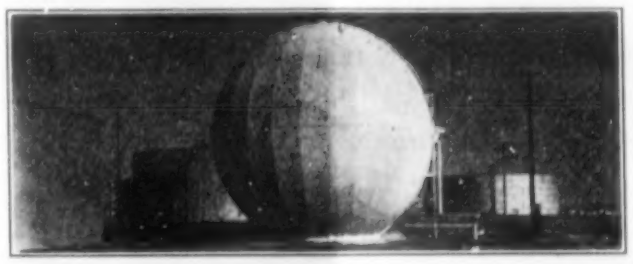
A new portable unit combining the operations of original exposure, developing and delivering through drying rolls has been added to the company's line of photocopy equipment. It measures 17 by 11 by 12 in., weighs 24 lb. and is available in a carrying case. It will handle letter and legal size paper to 11 by 17 inches. Prints can be made of material that has been written, typed, drawn or printed on translucent or opaque sheets within its capacity.

The machine employs two sheets of sensitized paper, one serving as the exposure negative and the other as a final positive. The two are entered face to face into the developing compartment after the negative and original have been exposed together. They move through the developing solution and then between drying rolls to issue together. They are peeled apart and the positive is ready for use. A cycle takes about 45 seconds. Operation is on 110-volt ac. A plastic solution bottle is provided to drain the liquid concentrate for storage when it is not being used in developing.

If you write maker identify as IEN - 8670

Storing - Spherical chamber holds vapor displaced from storage tanks

Source: CHICAGO BRIDGE & IRON COMPANY
332 S. Michigan Ave., Dept. IEN, Chicago 4, Ill.



This unit rates 150,000 cubic feet

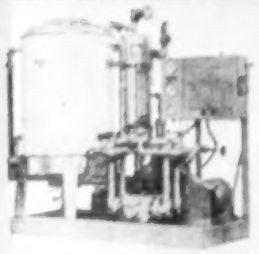
A ring girder is now employed at ground level to support the Horton Vaporsphere as shown in the illustration. The girder permits ground level installation and makes it unnecessary to elevate the structure several feet above the ground for support on cylindrical columns, as in the past. The unit connects to the vapor space of adjacent fixed roof storage tanks through large diameter piping. It provides temporary storage for vapors displaced from these tanks by breathing or filling. Vapor stored under a hemispherical membrane in the Vaporsphere is returned to the tanks when reverse conditions are in effect so none is lost.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8671

PROCESSING STEAM
WHEN, WHERE AND HOW YOU NEED IT
AT LOWER COST

Fast steam, quality steam, low cost steam . . . supplied to meet every fluctuating load demand; all are yours with the installation of the Clayton Forced Recirculation Steam Generator, or a battery of them. Made in sizes from 15 to 100 h.p., oil or gas fired, Clayton Generators are fully automatic; delivered complete and ready for operation. No stack, no bricking, no accessories required. Write for complete catalog.



COMPACT
The 100 h.p. Clayton Steam Generator shown above fits in the space required for a desk. Below is a battery of five Clayton Generators, a typical tandem installation.

CLAYTON MANUFACTURING CO.
BOX 550, EL MONTE, CALIF.

Clayton STEAM GENERATOR

If you write maker identify as IEN - 8672

Nose! Throat! PARCHED? DUSTY?

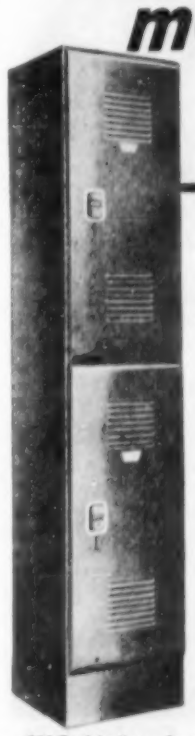
YOU NEED . . .
Water-cooled
DUPOR No. 20

Double sponge filters, saturated with water before wearing, provide cool breathing even under hot, dusty or smoky conditions. Paint shops, foundries, steel mills, chemical labs, oil refineries, etc. have used and recommended this respirator for years. Regardless the industrial dust or fume hazard, here is an individualized air-conditioning unit that makes breathing safe for every worker. Get details! Sample sent $2.50 postpaid.

H. S. COVER, SOUTH BEND, IND.
"Respirators for Industry since 1894"

If you write maker identify as IEN - 8673

Equipto introduces NEW **modern-flow** *LOCKERS*



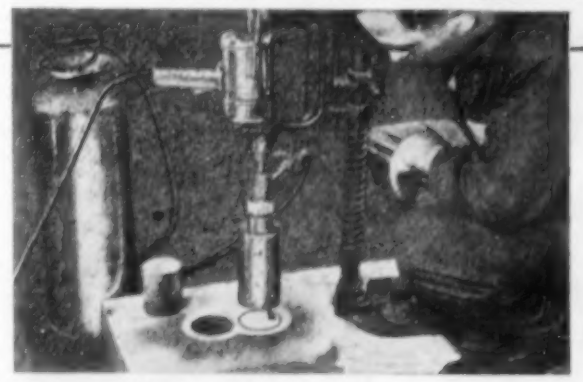
Advanced features abound in these ruggedly built, smartly styled new Equipto MODERN-FLOW Lockers. Sliding channel construction saves 83% of assembly time . . . eliminates need for nuts, bolts, or tools. Pilferproof design protects valuables. Gate-type, 4-point latch operates at finger touch . . . accommodates padlock, keyed lock, or combination lock.

And the gracefully rolled edges, recessed latches and louvres, handsome baked enamel finish, and complete absence of nuts, bolts, or protruding hinges give MODERN-FLOW Lockers a clean, luxurious "look" that would flatter any interior. Available in single and double tier types in all standard sizes. You can line them up side-by-side or back-to-back in any combinations desired. Standard colors and accessories.

See these handsome lockers at your Equipto distributor today or write us for fully illustrated literature.

Equipto
DIVISION OF AURORA EQUIPMENT COMPANY
655 Prairie Ave., Aurora, Ill. • Steel Shelving . . Parts Bins . . Drawer Units

If you write maker identify as IEN - 8674



Only 90 seconds to drill 3½" holes through 4" concrete slab with TRUCO WATER SWIVEL and TRUCO SWIVEL DIAMOND DRILL BITS

This combination can drill at high speed in hardest aggregates with only 150 lbs. pressure and ½" H.D. motor as against 1,000 lbs. pressure and 1"-1¼" H.D. motor specified for other tools. Truco combination can drill *reinforced concrete;* amazing drilling speed in brick, granite, ceramic tile, marble. Truco Water Swivel and Truco Swivel Diamond Bits can easily pay for themselves on your first job. Write for folder:

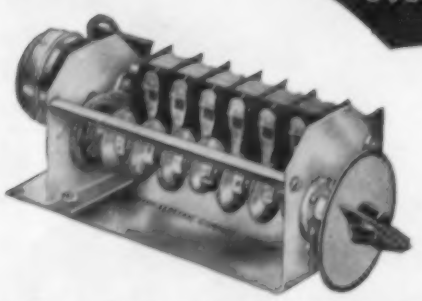
WHEEL TRUEING TOOL COMPANY
54-3200 West Davison Avenue • Detroit 38, Michigan

If you write maker identify as IEN - 8675

NOW IS THE TIME

For Immediate Delivery....

The NEW **ZENITH** Multi-Circuit CYCLE TIMER



For ACCURATE TIME ON ALL YOUR ELECTRICAL OPERATIONS!

Yes, you get immediate delivery on the Zenith Multi-Circuit Timer . . . the unit that's specially designed to accurately, dependably time any operation. Thousands in use in hundreds of applications—for electrical display signs, industrial furnaces, electrical appliances, laundry equipment and dry cleaning equipment. The Multi-Circuit Cycle Timer and other Zenith units solve many laboratory timing problems. May be set for on and off periods with as many circuits as desired . . . can be furnished without synchronous motor for elevator control, limit switch and similar operations. Available now!

For full information and prices, send for illustrated Bulletin No. 142

See Classified Telephone Directory for Name of Local Representative.

ZENITH ELECTRIC CO.

146 W. WALTON STREET • CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 8676

Where corrosion . . temperature . . pressure cause other valves to fail . . .

use **HOMESTEAD** *Lever-Seald* **PLUG VALVES**

THEY'RE "STICK-PROOF"

Operate Instantly . . Everytime . . Anytime

For more than 20 years, in practically every type of industry, HOMESTEAD LEVER-SEALDS have been giving trouble-free performance in services where extremes of temperature or pressure or corrosive line fluids cause ordinary valves to "stick" or "seize."

HOMESTEAD Lever-Seald PLUG VALVES are "Stick-Proof" because they're "Lever-Seald," which means that a powerful lever-and-screw device, built into every valve, assures positive action at all times under all conditions.

They operate fast, too—full open or closed by a quarter-turn; and because all operating parts are protected from line fluids, service conditions and weather, they last longer and cost less to maintain.

We make them in metals and alloys to suit your requirements in sizes 1½" to 12", for pressures from vacuum to 1500 lbs. and for temperatures ranging from 40° below zero to 1100° F.

WRITE TODAY for Valve Reference Book No. 39-3, No Obligation

HOMESTEAD VALVE MANUFACTURING CO.

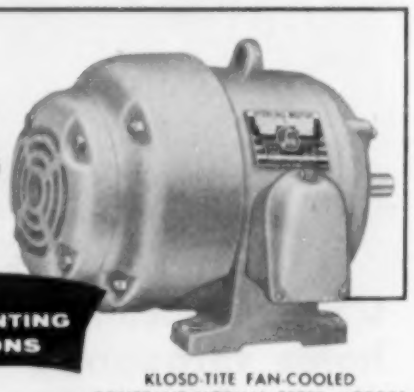
"Serving Since 1892"

P. O. BOX 85 CORAOPOLIS, PA.

If you write maker identify as IEN - 8677

MORE HORSEPOWER ...IN LESS SPACE...

with the **NEW STERLING** *Motor Line*



NEW NEMA MOUNTING DIMENSIONS

KLOSD-TITE FAN-COOLED CONSTANT NORMAL SPEED MOTORS

PLUS...

THESE 10 STERLING ADVANCED DESIGN FEATURES

Over 50% less inactive space	Herringbone rotor
Protected construction	Dual cooling system
Greater bearing protection	Increased efficiency and performance
Advanced design terminal box	Stator windings of advanced design
Heavy duty ball bearings	Improved insulation

WRITE FOR NEW BULLETIN No. H-422-AW

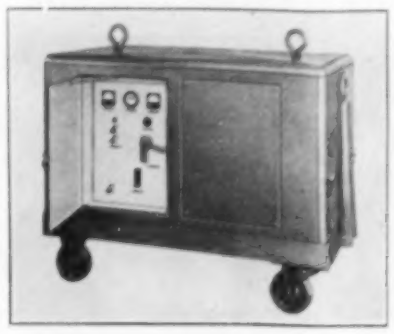
STERLING ELECTRIC MOTORS

New York City 51; Chicago 35; Los Angeles 22; Hamilton, Ont., Canada; Santiago, Chile

If you write maker identify as IEN - 8678

Generator - Motor-alternator for 400 cycle ac. to 7½ kva.

Source: AMERICAN ELECTRIC MOTORS INC. 4811 Telegraph Road, Dept. IEN, Los Angeles 22, Cal.



No brushes or springs

Illustrated is a new mobile assembly of the company's 400-cycle 115-volt single phase ac. motor alternator set. It employs belt connection between the motor and generator and is assembled in an enclosed weather proof housing with the necessary controls for plug-in operation. Cable storage space is provided inside the cabinet. Lifting eyes, handles and an attached tow bar are standard equipment.

Voltage output is regulated within 1 per cent by means of a magnetic amplifier. The 400-cycle ac. power is available upon plugging into a standard ac. power line carrying 220 or 440-volt single or three-phase current as specified.

If you write maker identify as IEN - 8679

Brazing - Flat silver rings available in coils to 4 in. diameter

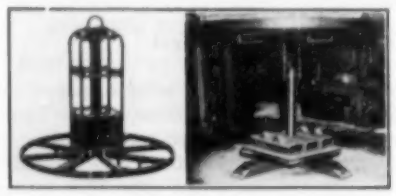
Source: LUCAS-MILHAUPT ENGINEERING CO. 5052 S. Lake Drive, Dept. IEN, Cudahy, Wis.

Easy Flo and Silfos

Flat wire, made of silver brazing alloy, is wound on edge and then is cut partially through for the length of the wire coil in manufacture of these new silver brazing rings. The rings represent further development of the wire rings previously described IEN-5554-51. Individual rings can be broken from the coil at the slot for application in a joint that is to be brazed. Diameter is to 4 in. inside. Thickness is 0.01 in. or more.

If you write maker identify as IEN - 8680

Steel coils can be picked up with the aid of a ball bearing reel equipped with a center ball, for a fork truck or crane, and positioned on a floor stand equipped with a center pin that registers with a tube in the center of the reel. Wire or strip stock feeds from the reel.



Adapters can be built to handle any coil diameter. Palmer-Shile Company, 16009 Fullerton, Dept. IEN, Detroit 27, Mich., can supply the reel for specified use.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8681

FOR MEDIUM AMOUNTS OF AIR *CONSTANTLY!*

JOY WG-9

COMPRESSOR

Water-cooled, double-acting, single-stage. Replaceable cross-head guides and cylinder liners. Force-feed lubrication, bearings that *never* need adjusting. "Dual Cushion" valves for higher capacity and better heat dissipation. The WG-9 is a real performer—best in its class.

15 SIZES • 30 to 150 PSI
172 to 881 CFM

SPACE-SAVER VERTICAL DESIGN

WRITE FOR BULLETIN

Consult a Joy Engineer

JOY

JOY MANUFACTURING CO., OLIVER BLDG., PITTSBURGH 22, PA.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED, GALT, ONTARIO.

If you write maker identify as IEN - 8682

Ceilcrete FOR **FLOORS, TANKS AND TRENCHES**

A NEW ACIDPROOF COATING FOR CONCRETE

CEILCRETE surfacing provides the same protection as more costly acidproof brick in most applications. It hardens to a stone-like surface which withstands trucking, foot traffic and erosion from hot solutions and steam. CEILCRETE floors have four times the load carrying strength of ordinary concrete. CEILCRETE is easily applied by troweling to all types of concrete surfaces: flooring . . pipe, tank and trench lining . . . cement block . . . walls . . . pump bases . . . waste disposal systems. Available as materials or a complete job on contract basis.

- ACIDPROOF
- ALKALIPROOF
- SOLVENTPROOF
- HIGH IMPACT STRENGTH
- ABRASION RESISTANT
- EROSION RESISTANT
- NONSPARKING
- NONSLIP
- ADDS NO WEIGHT

1869-CC

Write today for illustrated Bulletin 110

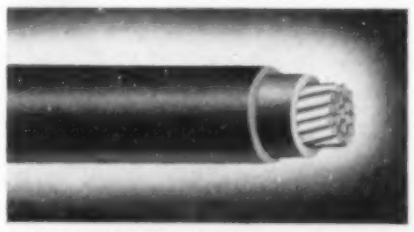
THE CEILCOTE CO.

CORROSION PROOF MATERIAL AND CONSTRUCTION

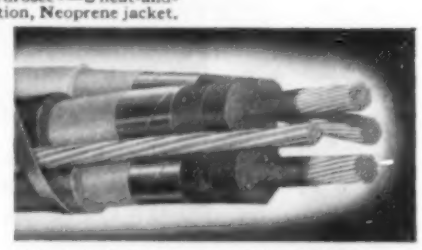
4840 RIDGE ROAD CLEVELAND, OHIO

If you write maker identify as IEN - 8683

10 reasons why you should specify, buy, install U. S. GRIZZLY POWER CABLES



U. S. Grizzly® Power Cable, 600 volts—Type RR, single conductor, Hydrosec®—S heat-and-moisture-resistant insulation, Neoprene jacket.



U. S. Grizzly® Power Cable, 5,000 volts—Type RR, 3-conductor, Uskorona®—ozone-resistant insulation—shielded—Neoprene jacket.

1. Lighter in weight than lead-sheathed cable and lead-sheathed armored cables.
2. Greater flexibility.
3. Easier to handle during installation.
4. Easier to splice, tap and terminate.
5. More resistant to chemical corrosion.
6. Unaffected by stray currents.
7. Better protection against weathering.
8. Longer life.
9. Cost less.
10. Made by United States Rubber Company, the *only* electrical wire and cable producer to grow its own natural rubber, make its own synthetic rubber and manufacture its own plastics.

U. S. Grizzly Power Cables are used for general power distribution, and can be installed in conduits, underground ducts, buried directly in the ground, or installed aerially. Neoprene jacket protects against acids, alkalies, oils, and mechanical damage and weathering. (All IPCEA and NEMA specifications complied with.)

Write to address below for free catalog, U. S. Electrical Wires and Cables.

UNITED STATES RUBBER COMPANY

Electrical Wire and Cable Department
Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 8685

CUT COST with FLEXAUST®

The high-quality flexible spiral-wire reinforced hose — SIZES 1¼ in. to 36 in. ID

MOVE Air, Dust, Gases, Materials BY Pressure, Suction, Gravity

Check these *Basic Economies*:

- ✓ **INSTALLED IN A HURRY**—Even by unskilled labor. Easy-to-connect accessories. Completely air-tight. No costly layout preliminaries.
- ✓ **STRONG, LONG LASTING** — Bonded, double-ply. Stands up through abrasion, aging, corrosion, moisture, chemicals, unlimited flexing.
- ✓ **MULTI-PURPOSE** — Protects products and health from dust and fumes, improves comfort, makes many jobs simpler, more efficient.
- ✓ **EASY TO MOVE** — Light, fully portable, completely flexible with negligible stress for moving collector heads.

For sizes, coatings, accessories, and flow characteristics . . . write for catalog today.

Your local distributor has Flexaust — as well as the companion ducting, *Portovent.*

THE FLEXAUST COMPANY

Dept. IE-8, 100 Park Avenue, New York 17, New York

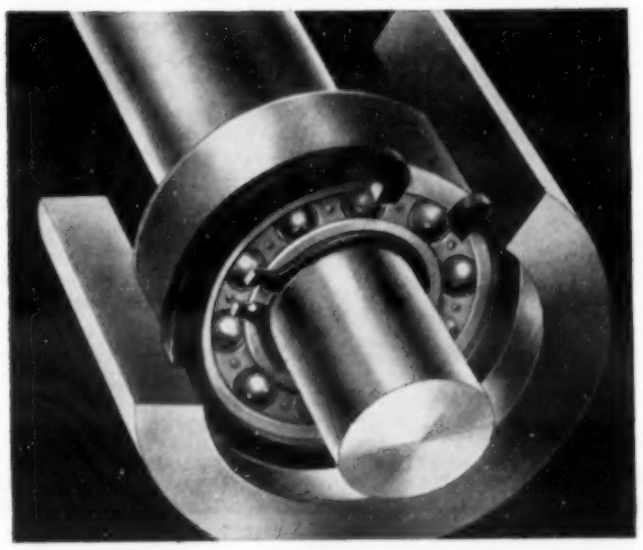
Formerly American Ventilating Hose Co.

FLEXAUST® PORTOVENT® BLOFLEX*

*Trade-mark

If you write maker identify as IEN - 8686

Save Time
Save Materials
Save Money!



Examine the designs of **all** your products and machines. No doubt you can use retaining rings on axles and in housings — not **only to save assembly time, but to save weight, parts and space.**

The use of these inexpensive yet efficient artificial shoulders is already widespread, and is increasing daily.

There are literally thousands of places in which redesigning for retaining rings can increase your profits and improve your products — uses ranging from heavy duty engines and drill presses to toys, gadgets and small parts of innumerable articles.

It's wasteful to cut down shafts to make shoulders. Redesign to groove smaller shafts and housings and use these high grade steel rings.

Let our engineers consult with you. Send for folders.

Don't pass up this opportunity to increase profits.

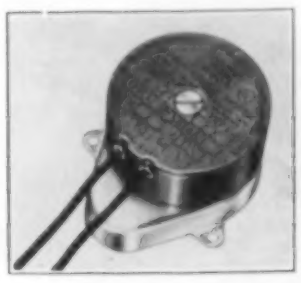
THE NATIONAL LOCK WASHER CO.

NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 8688

Motor - Geared head synchronous for timing duty, 30 in. oz. at 1 rpm.

Source: R. W. CRAMER COMPANY
Saybrook Ave., Dept. IEN, Centerbrook, Conn.



Supersedes Type SX

Type KX is a new geared head assembly in the company's line of synchronous motors. It runs equally well in any position due to its balanced bearing design and universal capillary lubrication. The motor is lubricated for life. It starts and stops within 2 cycles.

Speed at the output shaft ranges from 1 rpd. to 60 rpm. for either right, left, or oscillating rotation. Patented precision "no back" gears control rotating direction. Temperature rise is 43 deg. C. on continuous duty at rated load. A friction mechanism, permitting the shaft to be turned independently of the motor, or gearing, can be applied for operation in one or two directions. The motor also is available with a standard clutch, a reverse clutch or in dual design. The unit carries UL approval.

If you write maker identify as IEN - 8689

Corrosion Proofing - Plastic for strippable coat on metal products

Source: BISCHOFF CHEMICAL CORP.
Dept. IEN, Ivoryton, Conn.

Protected work is visible

Thermo-Cote K is the first transparent strippable coating in the company's line of corrosion proofing plastics. It is a crystal clear material and is intended to protect the surfaces and edges of products such as metal tools, parts, finished metal pieces against corrosion and abrasion during storage, handling and shipping.

The material is melted and held at a temperature of 300 deg. F. in a thermostatically controlled tank into which it is fed in small blocks. The shiny transparent skin tight covering, resulting from a dipping operation, protects the dipped part until the coating is removed by slitting and then peeling it off. The removed coating can be remelted.

If you write maker identify as IEN - 8690

Floors - Magnesium dock board bridges between platform and truck

Source: MAGNESIUM PRODUCTS OF MILWAUKEE
748 W. Virginia St., Dept. IEN, Milwaukee 4, Wis.

Light and strong

The formed sides on this new Milwaukee Versatile dock board carry a locking bar that can be adjusted lengthwise to hold the board in place between a platform and a truck or railroad car. Chain retained pins hold the bar in set position. Board length is 30 to 60 inches. Tracking width is 36 to 60 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8691

Electrically-Controlled SuperSpeed AIR CYLINDER

Six to ten times faster than conventional air cylinders, the Bellows Super-Speed Air Motor develops tremendous speed and power from normal air pressure. At 100 lbs. air, power is great enough to punch ½" dia. hole through 1/16" thick mild steel. Ideal for staking, riveting, forming, swedging, stamping or punching.

The Super-Speed Air Motor is a complete power unit with built-in low voltage Electroaire directional valve and speed regulators. (Also available with manually controlled valve.) Only one air connection needed.

Write for Bulletin 1163 today.
Address: Dept. IEN854
The Bellows Co., Akron 9, Ohio

2½" BORE • Stroke Lengths 2½" 4", 6", 9", 12" • Seven Mounting Styles

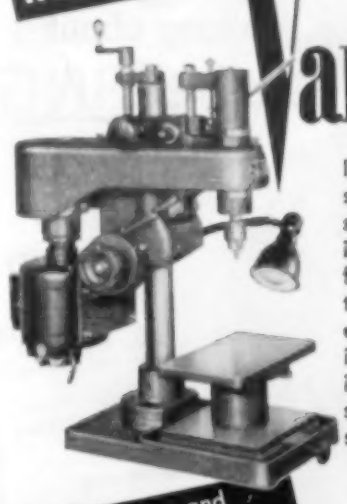
The Bellows Co. Akron 9, Ohio

If you write maker identify as IEN - 8692

5415

REMEMBER . . . THE WORD

Varimatic®



It's America's most outstanding super sensitive, small hole, precision drilling machine. And the difference in price between the Varimatic and the cheapest small hole drilling machine is reckoned in pennies per day. Consider that fact when you specify.

For prices and complete specifications

ASK FOR FREE BULLETIN 5415

ADDRESS: THE HAMILTON TOOL COMPANY
905 HANOVER STREET
HAMILTON, OHIO

IT'S A Hamilton Tool

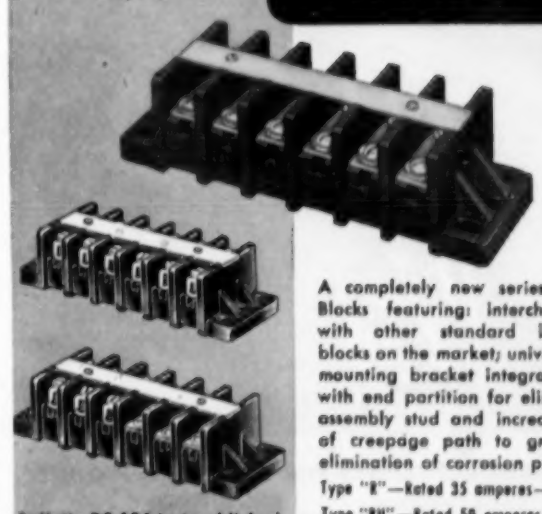
USE IT WITH CONFIDENCE

If you write maker identify as IEN - 8693

NEW

Curtis Terminal Blocks Make Better Connections Economically—Quickly A Type for Every Purpose

CURTIS SERIES "R"
(Types "R" — "RH" — "RHR")
TERMINAL BLOCKS



A completely new series of Curtis Blocks featuring: interchangeability with other standard high-current blocks on the market; universal 3-hole mounting bracket integrally molded with end partition for elimination of assembly stud and increased length of creepage path to ground; and elimination of corrosion problems.

Type "R"—Rated 35 amperes—750 volts
Type "RH"—Rated 50 amperes—750 volts
Type "RHR"—Any combination of "R" and "RH" Terminals in same block

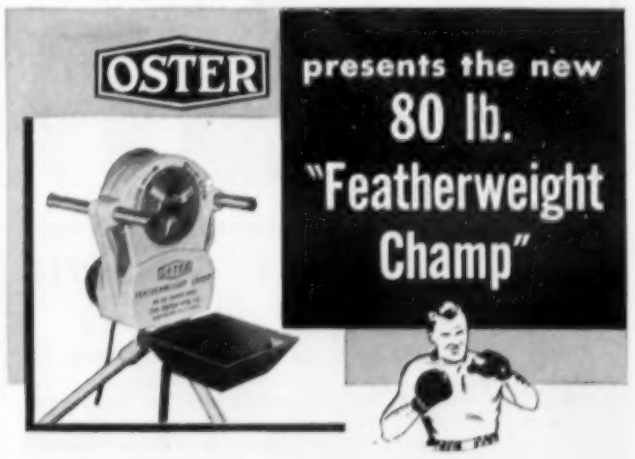
Bulletin DS 126 just published. —write. Also ask about wide selection of other Curtis Terminal Blocks.

CURTIS DEVELOPMENT & MFG. CO.

3214 North 33rd Street, Milwaukee 16, Wisconsin

If you write maker identify as IEN - 8694

OSTER presents the new 80 lb. "Featherweight Champ"



The all new Oster "Featherweight Champ", a Power Drive for Hand Pipe Tools, weighs only 80 pounds. One man can move it and use it with ease . . . yet the "Featherweight Champ" is exceptionally sturdy and powerful. Ideal for "on the spot" threading, its range is ⅛" to 2", and it is available with either electric or gasoline power.

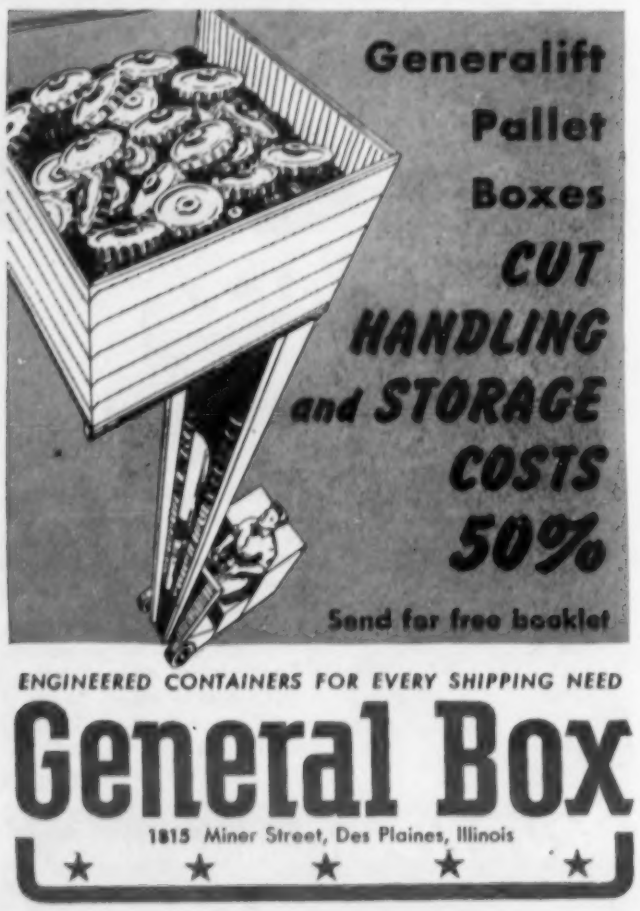
For the full story on the "Featherweight Champ" see your local Oster Distributor.

THE OSTER MANUFACTURING CO.
Main Office and Factory:
2053 East 61st St. • Cleveland 3, Ohio

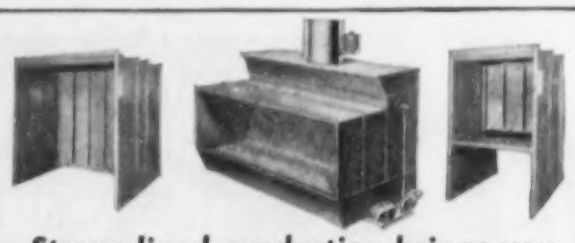
Builders of Cost Reducing Threading Equipment Since 1893

If you write maker identify as IEN - 8695

If you write maker identify as IEN - 8696



If you write maker identify as IEN - 8697



Streamlined production brings you
BETTER SPRAY BOOTHS
at a real saving!

Today, you can have the most efficient spray booths on the market at a price no more than ordinary equipment . . . and sometimes even less. This is possible because Binks engineers have improved and *standardized* the design of spray booths. Standard parts are assembled to provide high-efficiency that meets any requirement. These parts are mass-produced in Binks' new Franklin Park Plant . . . quickly, precisely and economically. And that's why you can buy BINKS approved Spray Booths now . . . and save money.

Send today for NEW 956 Catalog

It will tell you about the many models of spray booths available . . . will help you pick the right equipment for your use.
Binks Manufacturing Company
3120-34 West Carroll Avenue, Chicago 12, Ill.

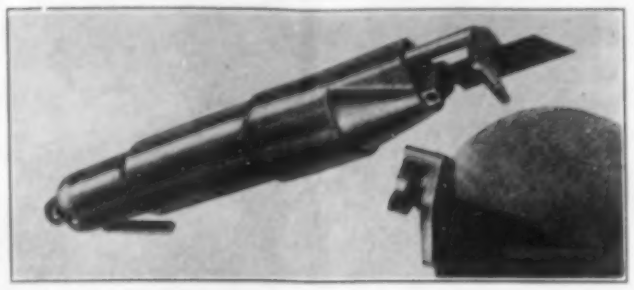
Binks
EVERYTHING FOR SPRAY PAINTING

GUNS • SPRAY BOOTHS • MATERIAL TANKS • EXTRACTORS & ACCESSORIES
REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

If you write maker identify as IEN - 8698

Sawing - Portable pneumatic tool, ¾ in. stroke, for saw blade or file

Source: CHICAGO PNEUMATIC TOOL CO.
6 E. 44th St., Dept. IEN, New York 17, N. Y.



Supplied with chucks and tools

Type CP-3017-F is a new production line portable pneumatic tool employing the company's Power Vane rotary pneumatic motor to drive a saw blade or a file having a round shank to ¼ in. or a flat shank to $\frac{11}{64}$ by $\frac{5}{32}$ inch. A saw blade collet or a file chuck are quickly interchangeable. The tool measures 14½ in. in length and weighs 5 pounds. It is provided with a threaded connection for ¼-in. hose.

Rotary movement is converted into reciprocating action at a maximum of 1,500 strokes per min. by a cam follower operating in a flood-lubricated track. A built-in speed regulator permits selection of the best speed for a given work condition, high speed for hard, brittle and fine grained materials, slower speeds for difficult work starts and soft cloggy materials. Exhaust air is directed from the motor through the tool nose to keep the work clear. The saw blade is bayonet type to penetrate soft material so no starting hole is required in this type of work.

If you write maker identify as IEN - 8699

Gage - Dial indicator unit to check recesses, deep holes, tapers

Source: MUELLER LABORATORY
239 W. Maple Ave., Dept. IEN, Monrovia, Calif.

Self-centering

The dial indicator, with which this new gage is equipped, reads in 0.0005-in. divisions to measure O-ring grooves, deep holes, tapers, recesses, inside spherical radii and out-of-round areas. The measuring tips are made of hardened steel. They are actuated by pressing down the control lever with a thumb to retract them for insertion in a hole or recess. The tips expand and record the dimension being checked upon release of the thumb lever.

The gage provides for continuously variable inside dimension measurement from 0.250 to 2.000 in. with standard interchangeable tips. Special tips provide for extreme depth penetration and for larger measurements. The gage body is made of cast aluminum finished in black crackle enamel.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8700

If you write maker identify as IEN - 8701

Packaging - Reusable container to ship instruments, replacement parts

Source: GEORGE D. ELLIS & SONS INC.
American & Luzerne, Dept. IEN, Philadelphia 40, Pa.

For Military use

Odd sizes, including special tall and short cans on standard diameters, are available in this new line of steel reusable shipping containers with lock-ring-bolt clamping heads. Containers measuring 5 in. in diameter are available in body heights from 3 to 15 inches. Units measuring 10½ in. in diameter are available in heights from 6 to 36 inches. The line includes a number of intermediate diameters and lengths, all meeting specification AN-8029. The container is designed to minimize requirements for internal cushioning and external packing for safe shipment.

If you write maker identify as IEN - 8702

Drying - Bag packed desiccant picks up moisture from small space

Source: NATIONAL MINE SERVICE CO.
Box 32, Dept. IEN, Beckley, W. Va.

Specific data upon request

Dri-Pak trade names a new desiccant that is packaged in a flexible synthetic bag measuring 1¾ in. in diameter by 15 in. in length. The bag is enclosed in a moisture proof container covered inside and out with aluminum foil and protected with a screw top cap. The container is opened when the desiccant is to be put into service, and the bag is removed for application in a small enclosed space such as an electrical compartment.

The desiccant picks up moisture from the air until the bag holds about 4 oz. of water. Then the bag, desiccant and water are removed for reactivation by placing the bag in an oven at a temperature of 325 to 350 deg. F. for about 3 hours. After this interval the material is again active and can be replaced in the compartment. The material does not deteriorate or generate objectionable gases at elevated temperatures and is non-poisonous. It is an electrical insulator.

If you write maker identify as IEN - 8703

Heating - Gas fired space unit rates 25,000 btu. per hour, 340 cfm.

Source: MODINE MFG. COMPANY
1724 Racine St., Dept. IEN, Racine, Wis.

Compact

Model U-25 is a new assembly of gas fired unit heater weighing 31 lb. and providing a heat throw of about 28 ft. at an 8-ft. mounting height. The unit employs a stainless steel burner and heat exchanger into which the burner fires. The assembly measures 11¾ by 8½ by 17⅝ inches. It is AGA approved for use on natural, mixed, manufactured, liquid petroleum gases. It is designed to serve small areas.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8704

FREE Send for your copy today

NOW • • • You can choose the RIGHT Industrial Work Glove for EACH Job . . .

by using the handy Hood Performance Chart

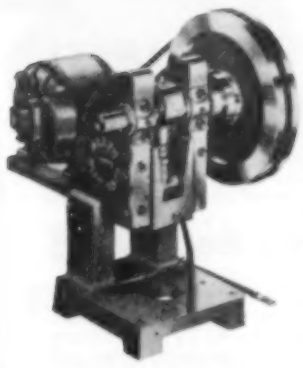
Chart shows comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic Coated Gloves; catalog contains eleven more pages of illustrations and description of Hood Industrial Gloves; the choice for *every* job in *any* industry.

HOOD RUBBER CO., WATERTOWN, MASSACHUSETTS
A division of the B F Goodrich Company

If you write maker identify as IEN - 8705

Press - Open back mechanical mounts on bench, takes ½ hp. motor

Source: ALVA F. ALLEN
Dept. IEN, Clinton, Mo.



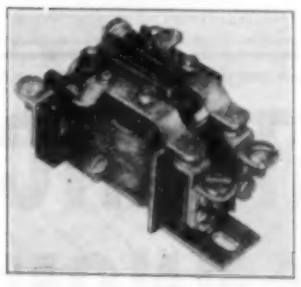
Literature on request

Stroke measures ¾ in. and ram adjustment is the same amount in this new 1-ton press. It is designed for belt connection to a motor, supplied by the user, to mount on a plate at the rear. Continuous operation can be maintained to 200 strokes per minute. Single operation is by means of a lever operated single pin clutch. The press weighs 105 lb. and stands 17½ in. in overall height. The base measures 8½ by 8½ inches. Bed dimensions are 5½ by 8½ inches. The ram face is 1½ by 3½ inches. List price without the motor is $97.50.

If you write maker identify as IEN - 8706

Relay - Double pole single throw, 20 amp. 115 volt ac. contact rating

Source: LEACH RELAY CO.
5915 Avalon Blvd., Dept. IEN, Los Angeles 3, Calif.

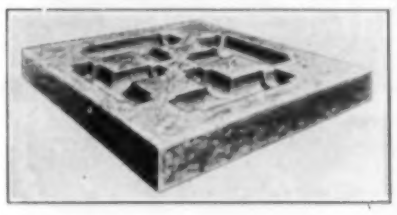


Catalog on request

Numbers 9094 and 9194 are new circuit control relays for heavy duty application to handle heavy contact loads with low coil power requirements. The double-pole single-throw contacts are made of $\frac{5}{16}$-in. silver. The coils are rated at 6 to 230-volt ac. or dc., the former for continuous duty at 60 cycles and about 8.5 va. The dc. coils are rated for continuous duty at about 4.4 watts. Maximum coil rating is 600-volt ac. or 230-volt dc. The relay measures 3 by 1⅞ by about 2 inches. Weight is about 7½ ounces. The coils are vacuum varnish impregnated.

If you write maker identify as IEN - 8707

Glass reinforced thermo-setting plastic material has been developed by Fiberite Corporation, Dept. IEN, Winona, Minn., for use in manufacture of dryers for foundry cores. The plastic forms at 320 deg. F. under 300-lb. pressure, employing an original metal mold. The finished dryers are aged for about six hours at 300 deg. F. They remain stable from that point on for passage through core baking ovens operating at temperatures to 500 deg. F. Fiberite 4030 is the designation.

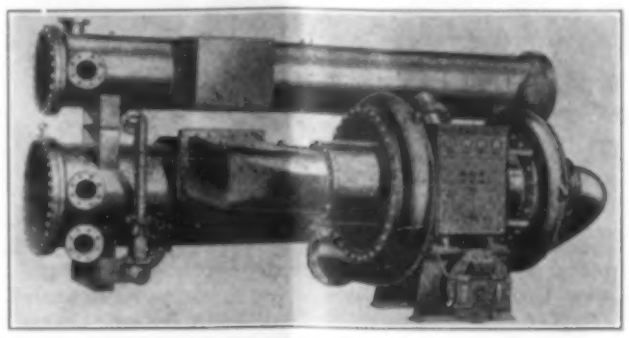


All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8709

Refrigerating - Centrifugal machine chills water for air conditioning use

Source: TRANE COMPANY
2017 Cameron Ave., Dept. IEN, La Crosse, Wis.



Bulletin DS399

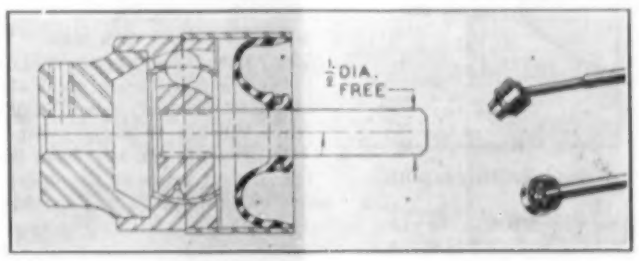
Three large sizes have been added to the company's CenTra-Vac line of water chilling refrigerating equipment, previously described IEN-1133-51. The line now includes eight sizes rating 45 to 400 ton of refrigerating capacity. The assembly employs an hermetically sealed centrifugal compressor that matches power consumption automatically to load variation in a range between 10 and 100 per cent of compressor capacity. Installation requires no special base. Vibration is negligible.

The compressor is two-stage centrifugal design and mounts its two impellers on the motor which contains the only two bearings in the assembly. These bearings are lubricated by filtered and temperature controlled oil from a positive displacement pump. Shaft seals are not required. The equipment can be started and stopped by push button control or installed with a thermostat to modulate, start and stop automatically for constant temperature. The refrigerant is Freon F-11. A tube type condenser and evaporator complete the assembly.

If you write maker identify as IEN - 8710

Drive - Universal joint provides constant velocity operation

Source: GEAR GRINDING MACHINE CO.
3901 Christopher St., Dept. IEN, Detroit 11, Mich.



For equipment drive

The company announces addition of a new miniature light weight assembly to its line of constant velocity universal joints, previously described IEN-9188-47. The new Rzeppa unit provides a clearance angle maximum at 40 degrees. Fixed running angle is determined by the required speed and torque. The joint is available with a sleeve assembly for adjustable length between the driving and the driven ends.

Steel balls, positioned in intersecting raceways, transmit the torque. The driving members are positioned by a ball socket at the center to maintain true concentricity.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8712

5418

PRECISION GEARS ON RELENTLESS PRODUCTION SCHEDULES

The feature of *independent* selection of speed, feed and indexing, which speeds machine set-up and provides a means for matching cutting speed and work feed to the material being machined, together with a "reserve of accuracy" built into the machine, has placed the Hamilton Precision Small Gear Hobber high in perference in the precision instrument field.

GET THE FACTS!
WRITE FOR FREE BULLETIN 5418
ADDRESS: THE HAMILTON TOOL COMPANY
905 HANOVER STREET, HAMILTON, OHIO

IT'S A Hamilton Tool
USE IT WITH CONFIDENCE

If you write maker identify as IEN - 8713

Lightweight FIREBRICK CUT OUR FUEL COSTS 26%

And that's not all! This user, who relined his annealing furnace with B&W *lightweight* Insulating Firebrick practically doubled his furnace output.

What's the story behind the remarkable performance of B&W IFB?

Lightweight B&W IFB mean that you have millions of tiny, insulating air cells in your furnace walls—keeping the heat inside your furnace where it can work for you. And because B&W IFB store and conduct less heat, they reduce heating up time and respond quickly to temperature changes, assuring excellent temperature control.

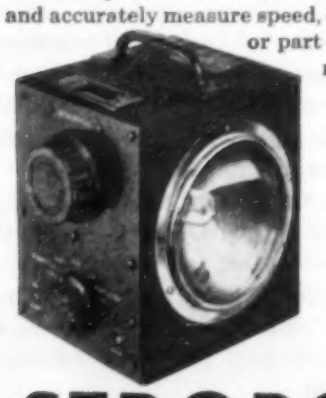
Get all the facts from your B&W Refractories Engineer. Offices in principal cities.

THE BABCOCK & WILCOX CO.
Refractories Division
General Offices: 161 East 42nd St., New York 17, N. Y.
Works: Augusta, Ga.
R-309

If you write maker identify as IEN - 8708

to Measure SPEED *and Stop* MOTION from 60 to 100,000 RPM!

THOUSANDS OF G-R Type 631-BL STROBOTACs are in use in Industry in the design, manufacture, maintenance, service and sales of all types of machinery. The STROBOTAC will 'stop' motion and accurately measure speed, or show any machine or part operating in s-l-o-w motion . . . as slow as a fraction of an rpm if desired . . . so that any misfits, irregularities, worn parts, slippage or lack of correct meshing of even the fastest moving part can be seen.



STROBOTAC®

Moderately priced at $150, the STROBOTAC may be the answer to your problem. Let us tell you more about it.

Write for the STROBOSCOPE Bulletin

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 · 8055 13th St. Silver Spring, Md. WASHINGTON, D.C.
920 South Michigan Ave. CHICAGO 5 · 1000 North Seward St. LOS ANGELES 38

If you write maker identify as IEN - 8711

Saved BY THE BELL!

. . . because your Watchman was ALERT to sound the alarm!

The Detex GUARDSMAN Watchclock keeps your Watchman alert . . . by giving you unbroken mechanical supervision of his activities night and day—weekends and holidays.

Write for free folder

DETEX WATCHMENS CLOCKS
PATROL
ALERT
ECO
NEWMAN
GUARDSMAN
DETEX WATCHCLOCK CORPORATION
Dept. B-6
76 VARICK STREET, NEW YORK 13, N. Y.
Sales and Service in All Principal Cities

If you write maker identify as IEN - 8714

new

Possibilities for Product Improvement . . . with LAPMASTER Precision Flatness and Finish

An ever increasing number of manufacturers of all types of products have found that by specifying lapped finish on mating surfaces they have been able to eliminate gaskets or improve product performance. Precision flatness and finish on a production basis is easily obtained with the Crane Lapmaster. Tolerances to one light band (.0000116") or less—micro-inch finishes of 2 to 3 RMS can be maintained consistently. Learn more about the possibilities of production lapping and the interesting subject of measuring flatness. The illustrated fact filled booklets are yours for the asking. Write today.

CRANE PACKING CO., DEPT. IEN-8
1815 CUYLER AVE., CHICAGO 13
"Protected by U. S. and Foreign Patents"

JOHN CRANE
CRANE PACKING COMPANY

If you write maker identify as **IEN - 8715**

The badge of quality on your product

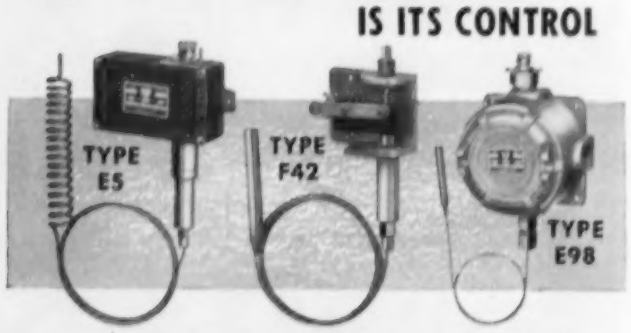
The users of your product respect the name Marsh on a pressure gauge or dial thermometer. Adopt Marsh Instruments and you will know why they have become "The Standard of Accuracy". There is a Marsh for every service.

Ask for this new catalog... It covers your instrument requirements.

MARSH INSTRUMENT CO.,
Sales affiliate of Jas. P. Marsh Corporation,
Dept. A, Skokie, Ill. *Export Dept.,* 3501 Howard St. Skokie, Ill.

If you write maker identify as **IEN - 8716**

THE HEART OF YOUR PRODUCT IS ITS CONTROL



... SPECIFY *UNITED ELECTRIC*

These UE thermostats are precision-built temperature controls of the sensitive remote bulb type. All of them are available with a wide variety of thermal assemblies and switches for use between temperature limits of −150° and +600°F.

Type E98 is an explosion-proof control that is principally used in hazardous locations where explosive vapors or gases are present. Write for Bulletin #3-5.

Type E5 is used with ovens, water baths, incubators, hot-plate presses, cooling cabinets, air-conditioning equipment, food and drink vending machines, etc. Write for Bulletin #3-2.

Type F42 is similar to Type E5 but has an open head. Write for Bulletin #3-3.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

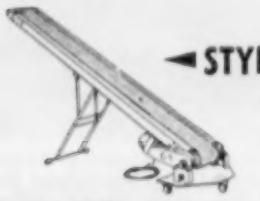
If you write maker identify as **IEN - 8717**

Here's your Best Buy in PORTABLE BELT BOOSTERS

ADJUSTABLE • REVERSIBLE • COMPACT • ECONOMICAL

STYL-O-VEYOR SR. ►

Portable units to help speed up loading and unloading of freight cars, trucks, etc., stacking of cases, conveying from one level to another. Two models are available—the heavy duty Senior, and the light duty Junior.



◄ STYL-O-VEYOR JR.

Styl-O-Veyors are universal conveyors, capable of being fed or discharged from either end. The angle of height is quickly adjustable by hydraulic power and hand winches within.

MAIL THIS COUPON FOR FULL DETAILS

FREE!

ISLAND EQUIPMENT CORP. Dept. IEN-8
27-01 Bridge Plaza North
Long Island City 1, N. Y.
Please send Bulletin HP20-2A on Styl-O-Veyor Portable Belt Boosters.

NAME _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as **IEN - 8718**

Drilling - Tool holder feeds coolant through drill center

Source: PERFECTING SERVICE CO.
332 Atando Ave., Dept. IEN, Charlotte 6, N. C.

Illustrated data in Bulletin 25

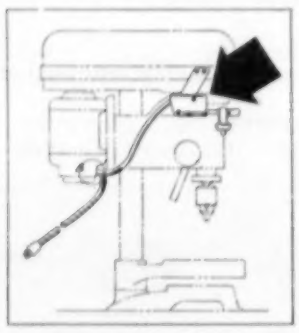
Type D Rotary Union designates this new combination of shank equipped drill holder and coolant feed head for use with "oil" drills for deep hole drilling. Application can be made horizontally, as shown, or in a vertical machine spindle. Pressure of the coolant, that feeds down through the center of the drill, forces chips out of the hole and prevents the drill point from overheating. The stationary portion of the new unit is mounted on needle roller bearings and is sealed to prevent leakage. The seal will hold pressure to 1,000 pounds. The unit is suited for speeds to 2,000 rpm.

The line includes three styles, two of which have taper shanks to apply in a machine spindle. The third is fitted with a connecting flange. One of the shank equipped units takes a taper tool shank. The other takes a straight shank. The flange equipped unit also takes a straight tool shank. Maximum drill shank taper is No. 3 or No. 5 in two available sizes. Maximum straight shank diameter is ¾ or 1½ inches.

If you write maker identify as **IEN - 8719**

Switch - Normally open design closes on inserting chuck key handle

Source: TRICOP COMPANY
308 W. Center St., Dept. IEN, Akron 2, Ohio



On a drilling machine

The company announces new design of its safety switch for installation in the power line to a drilling machine or portable electric tool equipped with a key operated chuck. The circuit through the switch stands normally open. It is closed when the chuck key handle is inserted. The arrangement makes is possible to start the machine or tool spindle only when the key is in the switch.

It prevents the key from being lost. It protects the operator while he is opening or closing the chuck. List price in single units for switches on portable equipment is $3.95. List price for single units on stationary machines is about $4.50.

If you write maker identify as **IEN - 8720**

Teflon square sheets, measuring 36 and 48 in. with thicknesses starting at 1/16 in., and a 24-in. square sheet in thickness starting at 1/32 in., are now available from Chemical and Power Products, Inc., 11 Broadway, Dept. IEN, New York 9, N. Y. Special sizes, to 72 in. in length and to 60 in. in width, also can be supplied. The sheets are particularly intended for manufacture of gaskets.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8721**

SPEED CONTROL WIDE RANGE! LOW COST!

new catalog free

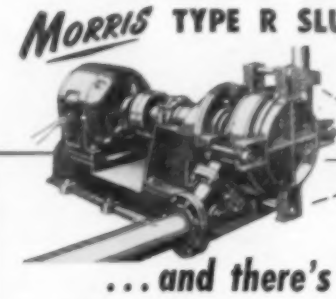
Just off the press! New illustrated catalog describes SPEED SELECTOR'S new line of Variable Pitch Sheaves. These sheaves are for extra-wide range of speed control on fixed centers...also completely new designs for low speed applications. Save time, trouble, money...WRITE FOR CATALOG No. 44 TODAY.

SPEED SELECTOR INC.
118-A NOBLE COURT • CLEVELAND 13, OHIO

If you write maker identify as **IEN - 8722**

Cuts Pump Maintenance Costs

MORRIS TYPE R SLURRY PUMP



REMOVE **4** BOLTS

...and there's the impeller!

Without disturbing the suction, the discharge piping or the bearings, you can inspect, unclog or remove the impeller on the Morris Type R Slurry Pump. Simply loosen 4 *outside* clamping bolts and pull off the end cover. Cuts maintenance costs and lay-up time to a bare minimum by getting the pump back in service quicker.

The Morris Type R Slurry Pump offers many other features you'll appreciate. Write for specifications, capacities, performance charts and other helpful information. Ask for Bulletin 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Representatives in Principal Cities

MORRIS *Centrifugal Pumps*

If you write maker identify as **IEN - 8723**

NEW ATOMIC CANNON

keeps its own score on this Veeder-Root Counter

(U. S. ARMY PHOTO)

Everyone Can Count on VEEDER-ROOT

This mobile 280 mm. atomic cannon has *two* recoil motions. The primary recoil absorbs the cannon's "kick." The secondary recoil (something new in artillery) absorbs the forces created by the primary recoil. And each recoil motion is recorded by this special Veeder-Root Counter designed with a plunger-action shaft . . . which keeps the score on the cannon's use and indicates approaching need for maintenance.

This again points up the fact that "Anything Worth Making — or Worth Doing — *Is Worth Counting.*" And Veeder-Root has the experience and resources *you* can count on, to give you any counter you need . . . for any mechanical or electrical application . . . in any field from Atomics to Automation. Write:

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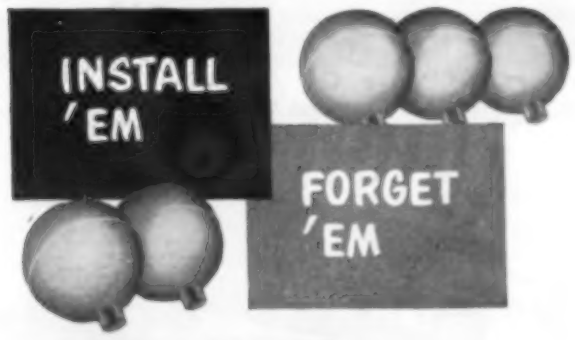
HARTFORD 2, CONNECTICUT

Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

"The Name that Counts"

If you write maker identify as IEN - 8725



STAINLESS STEEL FLOATS

● Stainless floats by Chicago Float Works give you a practically permanent installation. Whether for use on original equipment or for replacement, you just put 'em in and forget 'em. You'll get years and years of trouble-free service in high or low temperatures or pressures. All sizes, shapes, spud connections available. No corrosion problem . . . extreme buoyancy — the best in floats to meet every need!

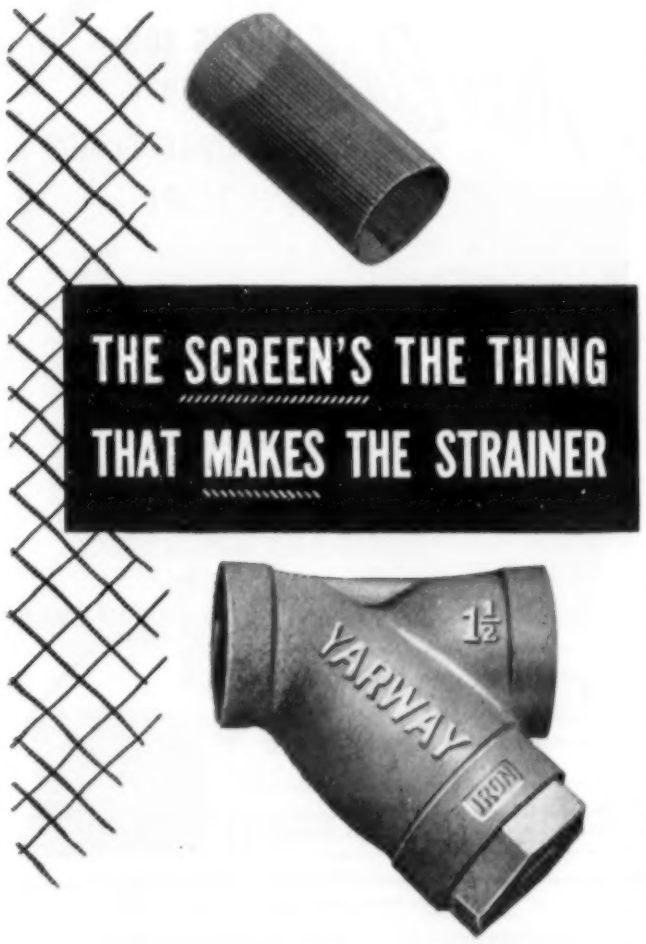
● Standard Diameters 2" to 10" ● All Standard Spud Connections ● Top quality Stainless Steels ● Non-corized weld for superior strength, and corrosion resistance available where required

Send for complete bulletin on styles, sizes, shapes, spud connections and recommendations.

CHICAGO FLOAT WORKS

2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 8726



■ A high-grade woven Monel wire screen is the heart of the Yarway Fine Screen Strainer—one reason why hundreds of thousands of Yarways police the pipelines in nearly every industry, stopping rust, scale and dirt from clogging vital equipment.

Another reason why it pays to select Yarways—strainer screens come out with cap when removed from body. Eliminates costly time delays in fishing out old screens from strainer bodies.

More reasons—superior finish to prevent rust and for better appearance; straight threads, machined faces and spark-plug-type gaskets on screen caps; ten sizes from ½" to 3".

Yarway Strainers are stocked for IMMEDIATE DELIVERY by 250 local distributors. Write for Bulletin S-203.

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

YARWAY fine screen strainers

If you write maker identify as IEN - 8728

Truck - Power lift platform unit to handle skids with varying heights

Source: ELWELL-PARKER ELECTRIC CO.
4205 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio

Hydraulic lift, motor travel

Rating is 3 ton for this new low lift platform truck. The platform measures 72 in. in length by 20 in. in width in the standard design but can be varied to meet specific requirements. Height in "down" position is 7 inches. Lift range is through 10 in. so skids with legs to 14 in. in height can be lifted free from the floor. Four trailing wheels support the load. They are mounted in tandem and are articulated for travel over uneven floor surfaces.

Control centers at the company's Rolotac snap acting contactor. It provides instantaneous make and break to minimize arcing. The operator rides in standing position at the rear.

If you write maker identify as IEN - 8729

Wrench - Chain type for pipe, made of non-sparking bronze, four sizes

Source: AMPCO METAL INC.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.

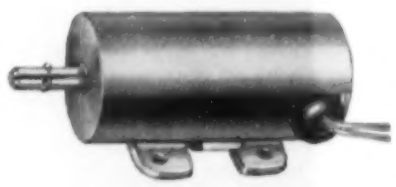
Details and prices upon request

Ampco Metal is employed in construction of all of the parts of the company's new Type W non-sparking chain pipe wrench with exception of beryllium jaw inserts. These inserts are reversible and interchangeable. In addition to being spark resistant, the bronze in the wrench also is resistant to corrosion and is non-magnetic. The smallest 20-in. size takes pipe from ⅛ to 1½ inches. The largest 72-in. unit takes pipe from 2 to 12 inches.

If you write maker identify as IEN - 8730

Solenoid - Miniature dc. unit to operate keyboards, signals, latches

Source: CANNON ELECTRIC CO.
418 West 33 Ave., Dept. IEN, Los Angeles 31, Calif.



Bulletin PR-S2

The armature in this new No. 20288 solenoid is made of soft iron and is mounted to ride in the nylon bobbin on which the solenoid coil is wound. The nylon insulates electrically and provides a bearing surface that requires no lubrication. In addition to the unit illustrated, a second design employs an open coil in a U-shaped steel bracket.

Both units measure about ¾ in. in diameter and are about 1½ in. in length. The winding can be specified in a range of dc. voltages. A 24-volt unit of 13-amp. type, for operation on intermittent duty, provides a pull of 25 oz. at ¾-in. stroke.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8731

Wherever temperature readings are required—on the production line, in the laboratory or in the field—this sturdy precision instrument can bring you instant, accurate results.

Here's Why

It's Fast...in operation and quickly read. Precision movement designed to laboratory standards. Direct reading scale face is easily understood—no slide wires or conversion tables necessary.

It's Accurate . . . consistently to within ¾ of one percent under almost all variable conditions. Sturdy, protective case assures continued accuracy in toughest portable service. Ten scale ranges available, from 0-400° to 0-3000°F. Equivalent Centigrade scales available at no extra cost.

It's Portable . . . compact size, 6½"x6"x3", and light weight make this pyrometer highly portable and easy to use anywhere. Write today for complete details and prices. Illinois Testing Laboratories, Inc., Room 517, 420 N. La Salle Street, Chicago 10, Illinois.

Send for Bulletin on 1500 Pyrometer.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 8732

5411

"ONE MAN CREW"

When you see PORTELVATOR (R) (the handy Hamilton portable elevating table) doing the lifting and moving jobs which previously required the combined strength of three or more husky men you will know why so many present users call it a "one man crew."

(Prices start at $155.00*)
Get one—and start it to work in your operation.

WANT THE COMPLETE FACTS? Write for Bulletin No. 5411—Address The Hamilton Tool Company, 905 Hanover Street, Hamilton, Ohio.

IT'S A **Hamilton Tool** USE IT WITH CONFIDENCE

*Prices subject to change without notice.

If you write maker identify as IEN - 8733

Research worker making one of hundreds of tests in Anaconda's modern research center.

Has Anaconda the answer to your Magnet Wire problem?

Today, in Anaconda's independently housed development laboratory, scientists are finding answers to *why* magnet wire behaves as it does. And *how* it can be improved. Experiments and tests bring practical solutions to many of today's magnet wire problems...and insure better materials and methods for tomorrow. *Have you a magnet wire problem?* Perhaps our laboratory has already uncovered information that will help you solve it. Ask your Anaconda Salesman or write Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

54429 B

ANACONDA MAGNET WIRE

If you write maker identify as IEN - 8734

Faster material handling — less cost!

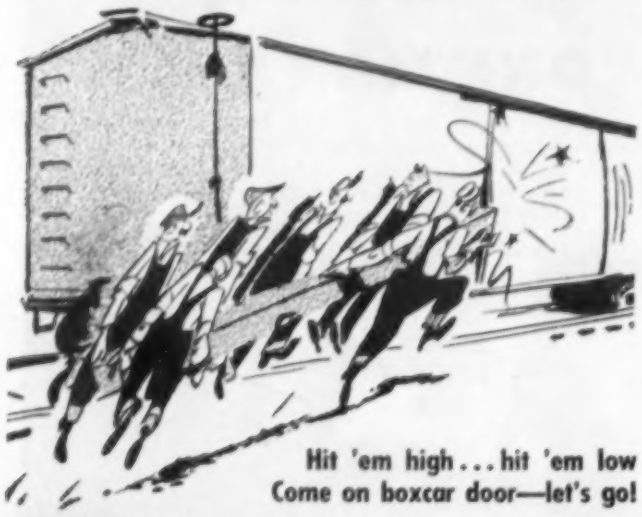
The "357" is a typical one-man UNIT crane . . . compact, powerful, works fast at low cost even in cramped space, inside your plant or out in yard . . . great for lifting, loading, unloading, material-handling of steel, pipes, bars, lumber, bulk materials and equipment . . . moving, erecting, dismantling machinery. Easy to operate...360° swing...full-vision cab assures complete visibility, an aid to speed and safety. Catalog has complete data. Write for your copy.

UNIT CRANE & SHOVEL CORP.
6605 West Burnham Street • Milwaukee 14, Wisconsin, U. S. A.

UNIT
CRANES CLAMSHELLS MAGNETS

A 7851-1/9

If you write maker identify as IEN - 8735



Hit 'em high . . . hit 'em low
Come on boxcar door—let's go!

Why use 14th Century methods to open balky, hard-to-roll boxcar doors? Why endanger lives and limbs? Why waste labor, time and money?

THE NOLAN ONE-MAN CAR DOOR OPENER OPENS ANY BOXCAR DOOR IN 20 SECONDS OR LESS!

A few quick pulls on the anchor chain by one man and the door rolls open. The NOLAN saves its low initial cost in the first hour of operation.

NOLAN ONE-MAN CAR DOOR OPENER
Order one or more now!
Free Literature

$37.50
F. O. B. Bowerston

THE NOLAN COMPANY 114 Pennsylvania St. Bowerston, Ohio

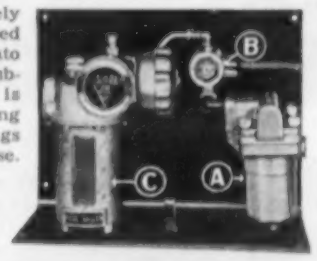
If you write maker identify as IEN - 8736

On a single rolling mill . . . also saves plenty in maintenance, lubrication time and lubricant!

Before Oil-Mist was installed on this rolling mill, temperatures ran high, expensive bearings were in danger. After Oil-Mist, temperatures dropped—so did the use of rolling coolant—$480 worth a month! Plus a saving of 24,000 gallons of preheated water a month—previously added when replacing coolant! Lubricant consumption fell from 15 or 20 *pounds of grease a* DAY to 2½ *gallons of oil a* WEEK! Lubrication time—a sixth of what it was.

Impressive? Sure, but Oil-Mist effects comparable savings on *any* machine.

Alemite Oil-Mist is a completely automatic, completely enclosed system which atomizes oil into mist—distributes it through tubing to bearings—where it is applied in a uniform, cooling coating. Suitable for bearings designed for either oil or grease.



A. Water Separator
B. Solenoid Control
C. Oil-Mist Lubricator

DELIVERS OIL TO BEARINGS THREE WAYS

Oil-Mist
For any type of anti-friction bearing—ball, roller or needle.

Oil-Mist Condensed
For plain bearings, slides, ways, vees, cams and rollers. Oil-Mist condensed to liquid.

Oil in Spray Form
Nozzle condenses mist—concentrates application. For open and enclosed gears and chains.

A PRODUCT OF SW STEWART-WARNER

Free! the complete story on Alemite Oil-Mist and how it can be applied to ANY machine. Specifications, typical installations, case histories. Get yours now!
Alemite Division of Stewart-Warner, Dept. K-84
1850 Diversey Parkway, Chicago 14, Illinois

Name _____
Company _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN - 8738

Truck - Hand hydraulic lift for pallets and platforms to 1 ton

Source: LEWIS-SHEPARD
125 Walnut St., Dept. IEN, Watertown 72, Mass.

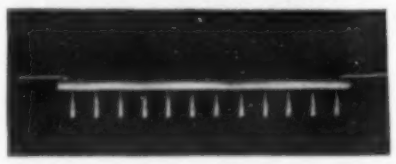
Specifications on request

Six fork lengths range from 32 to 60 in. and six fork widths are from 18 to 30 in. in this new light weight hand hydraulic pallet truck. Weight is 250 lb. with 48-in. forks on a 27-in. spread. The bearings are factory lubricated and sealed or of oil impregnated design so no service lubrication is required. Lifting action is by operating a hydraulic pedal located on the right hand side. A valve releases the hydraulic oil to permit the forks to come down. The steering wheels are equipped with rubber tires. The fork wheels are aluminum.

If you write maker identify as IEN - 8739

Static Eliminator - Wire tufts on wood bar to ground static charge

Source: HERMAN H. STICHT CO.
27 Park Place, Dept. IEN, New York 7, N. Y.



Bulletin 125

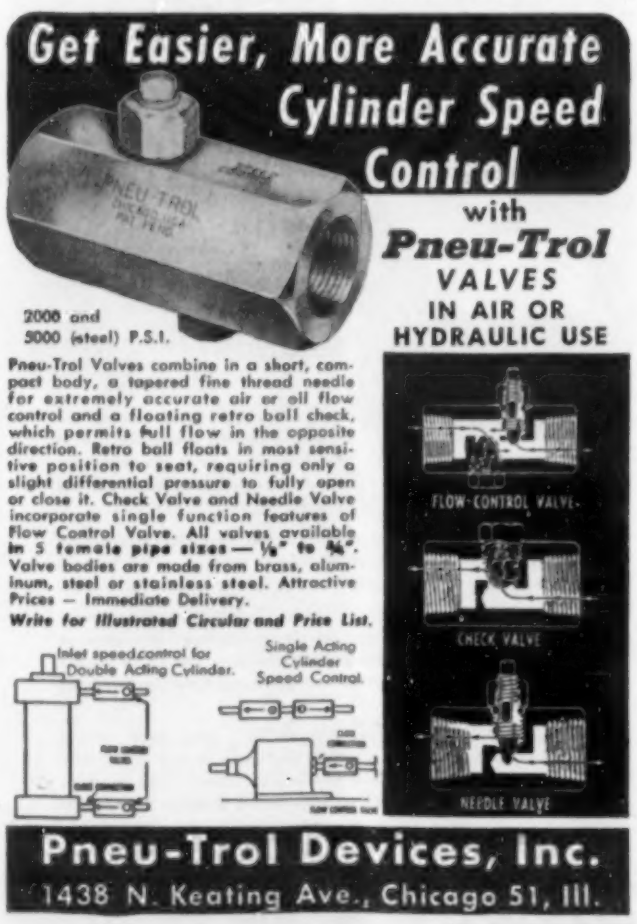
Magic Wand trade names a new assembly of tufted wire bristles spaced along a wood bar and grounded at each end. The unit applies on a machine where a static charge exists to discharge the static to ground as rapidly as it can accumulate. The wire is maintained at zero ground potential. The treated wood bar, with its low electrostatic capacitance, precludes any danger of sparking. Application is near moving material as it comes from rollers, such as paper, plastic, rubber textiles. Installation permits speeding up machinery in a good many cases that have previously been limited by the static.

If you write maker identify as IEN - 8740

New application for the temperature signaling Tempilstik, and the companion material Tempilaq, is in connection with heating and vacuum forming Formica plastic sheet. The Tempilstik, rating 325 deg. F., is employed to mark the sheet prior to placing it in the heater. These marks become smears at 325 deg. F. to indicate that the sheet has reached the proper temperature to apply vacuum for the forming operation. Tempilstik is employed to mark the rear surface of the sheet. Tempilaq is used on the decorative side in connection with Scotch tape. The tape is applied at intervals along the area to be heated and then the Tempilaq is applied on it. When the work is completed, the Scotch tape is stripped off clean. Manufacturer of the heat signaling materials is Tempil Corporation, 132 W. 22nd St., Dept. IEN, New York 11, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8741



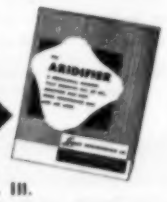
If you write maker identify as IEN - 8742

INSTALL ARIDIFIERS ON LINES SERVING

- Paint Spray Guns
- Air Tools
- Air Hoists
- Foundry Jolting Machines
- Sand Blasting Tools
- Sand Blasting Rooms
- Metal Spray Guns . . . or Wherever the line must deliver clean, dry air or gas

On any air or gas line 92% of the dirt, oil, scale and water that enter the Aridifier is trapped and removed from circulation. The Aridifier's patented centrifugal-baffle action scrubs air and gas clean and dry . . . protects equipment, prevents freezing, fouling, corrosion and caking, produces best results with spray gun and air tool operations, etc. Easy to install. Self cleaning. Maintains itself. 10 models available. Capacity 7 CFM to 17,000 CFM.

Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.
Write for This Catalog Now!



Logan ENGINEERING CO.
4902 W. Lawrence Ave., Chicago 30, Ill.

If you write maker identify as IEN - 8743

If you write maker identify as IEN - 8744

If you write maker identify as IEN - 8745

84 YEARS OF SERVICE

Hamilton Specializes In

HIGH GRADE CONVEYOR

BELTING

FOR INDUSTRY

SUPER SERVICE CONVEYOR

STEP PLY CONSTRUCTION

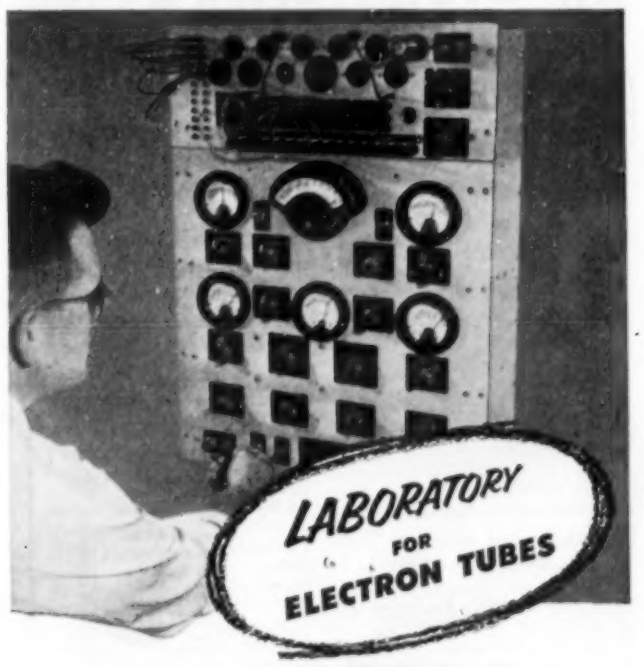
Just 2 of the more than a dozen types of Belting made by Hamilton Rubber

Through constant research and improved manufacturing facilities, Hamilton is able to offer you the *precise* Conveyor Belt for your particular service requirement. It is "engineered" to deliver better performance through progress."

Send For Descriptive Folder

HAMILTON
RUBBER MFG. CORP.
Trenton 3, New Jersey

If you write maker identify as IEN - 8746



WESTON

true mutual conductance

ELECTRON TUBE ANALYZER

(over-all Gm accuracy 3% or better)

Tests tubes under actual circuit operating potentials.

Tube characteristic operating curves can be plotted for comparison with manufacturer's specifications.

Transconductance can be measured directly without need for null adjustments or correction factors.

Voltage Ratio method of measuring transconductance meets the IRE Standard 50 IRE 7.S2 paragraph 7.2.2.4.

Completely self-contained with all necessary power supplies, meters and switching for performing short tests, static characteristic measurements and grid to plate transconductance measurements.

A well filtered d-c power source is supplied, making it possible to test tubes with d-c potentials which can be accurately adjusted to correspond to actual circuit voltage operating conditions.

Precision meter shunts and **multipliers** are wire wound to 0.5 per cent accuracy.

Special circuitry makes meter loading effects negligible.

Regulated grid bias supply keeps critical voltage constant. Plate and screen supplies do not affect grid bias setting.

Wide range of measurement of transconductance provides good readings on all tubes from small subminiature types to large power control types. The true transconductance is obtained on all triodes and pentodes, including low mu control tubes having plate resistance as low as 250 ohms.

Transconductance ranges are available in the following combinations of range and grid signal voltages:

Grid Signal	1.0	0.5	0.2	0.1	Volts
Gm x 1	300	600	1500	3000	Micromhos
Gm x 10	3000	6000	15000	30000	Micromhos

The Gm x 1 range is especially useful in the measurement of subminiature tubes having low transconductance.

Dependability and **Accuracy** assured by sound engineering, skilled manufacture and high quality components.

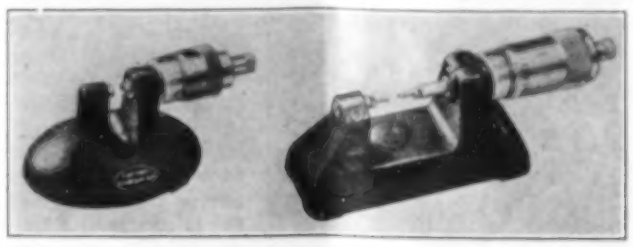
Descriptive literature on Model 686 gladly sent on request. WESTON Electrical Instrument Corporation, 614 Frelinghuysen Ave., Newark 5, N. J. 7675

WESTON *Instruments*

If you write maker identify as IEN - 8748

Gage - Bench micrometers
read to 0.4000 and 1.0000 inch

Source: GEORGE SCHERR COMPANY
200 Lafayette St., Dept. IEN, New York 12, N. Y.



Dull Lustro-Chrome finish on head

Type 40G new bench micrometer, to the left in the illustration, provides a throat depth of 1.6 in. and a measuring range to 0.4000 inch. It is fitted with tungsten carbide anvils. It lists at $46.

Type 40H, to the right, has a non-rotating plunger type spindle that takes eleven interchangeable sets of anvils of various shapes. Range is to 1.0000 inch. Throat depth is 1.28 inches. List price, including one pair of anvils, is $110. Additional anvils list at $16.50 a pair. Packaging is in wood cases.

If you write maker identify as IEN - 8749

Soldering - Aluminum solder
in wire form with powdered flux

Source: BELMONT SMELTING & REFINING WORKS
330 Belmont Ave., Dept. IEN, Brooklyn 7, N. Y.

Technical data upon request

Belmont 60, with a melting point of approximately 650 deg. F., and Belmont 40, with a melting point at about 400 deg. F., are two new extruded aluminum wire solders available in $\frac{1}{16}$, $\frac{3}{32}$ and $\frac{1}{8}$-in. sizes on 5-lb. spools. The wire is employed with an aluminum flux powder which eliminates precleaning of the surfaces to be soldered.

If you write maker identify as IEN - 8750

Meter - AC. voltmeter
reads top 5 to 10 per cent of range

Source: BECKMAN INSTRUMENTS INC.
220 Pasadena Ave., Dept. IEN, South Pasadena, Calif.

Bulletin 115

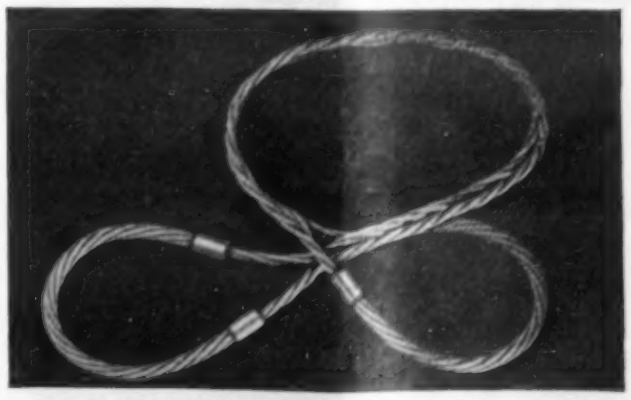
Only the voltage range of interest is expanded full scale in this new portable voltmeter for high accuracy reading with a rugged low accuracy meter movement. The instrument employs a patented circuit. It does not use electron tubes. Its accuracy is guaranteed within 0.5 per cent of input voltage.

Frequency range is 50 to 2,000 cycles. The meter provides for scale expansion and recording action over a 100 to 500-volt ac. range in thirty-nine 10-volt full scale steps. The instrument is ruggedized.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8751

"FLATWEAVE" SLINGS GIVE YOU EXTRA ADVANTAGES



FOR MOST HOISTING JOBS where flexibility is a factor, Roebling "Flatweave" Slings can't be beat. They're quicker and easier to handle—and they are kink resistant. On top of that, "Flatweave's" broad, flat 6-part braided bearing surface protects edges and prolongs sling life.

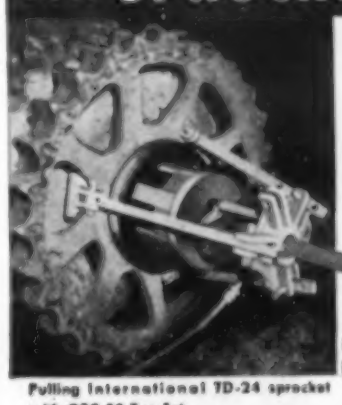
Send for a copy of the "Roebling Sling Data Book" which gives full facts about slings and sling accessories... shows the way to faster, more economical materials handling. John A. Roebling's Sons Corporation, Trenton 2, N. J.

ROEBLING CF&I

Subsidiary of The Colorado Fuel and Iron Corporation

If you write maker identify as IEN - 8752

PULL SPROCKETS IN MINUTES



Pulling International TD-24 sprocket with OTC 50 Ton Set.

WITH THE **NEW** OTC **SPROCKET PULLER**

OTC 50 TON Hydraulic Ram with Adaptors pulls or installs on the job or in the shop.

SAVE TIME, LABOR... REDUCE "DOWN-TIME"

OTC 50 Ton POWER-TWIN Hydraulic Ram . . . used for hundreds of tough jobs including the above.

Now the costly job of pulling Crawler-Tractor sprockets can be done in minutes by one man. Manufacturers approved sets are available for, Caterpillar, Allis-Chalmers and International Harvester . . . or a Universal Set to fit all three. If you have a 50 Ton OTC Ram, you need only the adaptors . . . three types of pumps available.

SEND FOR FREE FOLDER

OWATONNA TOOL COMPANY
371 Cedar Street • Owatonna, Minnesota

If you write maker identify as IEN - 8753

CORDS

complete line of...
MALE ATTACHMENT CAPS
Meet New National Electrical Code

You can get delivery NOW from Cords on a *complete line* of molded rubber plugs with blades and grounding pin positioned according to the new regulations. UL approved. Straight or right angle. Parallel blades for 15 Ampere-125 Volt, or tandem blades for 15 Ampere-250 Volt. Cover range of wire gauge sizes from 12-3S to 16-3SJ, inclusive. Get set now for the changeover.

Write for Descriptive Bulletin C 442

These are two of Cords complete line of new molded rubber attachment plugs.

WIRE SX PRODUCTS

CORDS LTD.
DIVISION ESSEX WIRE CORPORATION
121 DODGE STREET, DEKALB, ILLINOIS

If you write maker identify as IEN - 8754

LOGAN AIR AND HYDRAULIC **POWER**

SPEEDS • COORDINATES • REFINES PRODUCTION IN OVER 10,000 INDUSTRIAL PLANTS

Logan

ROTATING AND NONROTATING **AIR CYLINDERS**

NONROTATING—7 STANDARD MOUNTING TYPES

Standard sizes from 1½" to 16" bore; maximum stroke, 18". Special models to meet your requirements. Logan features larger ports, sturdier construction, maximum power without leakage, permanent seal around piston rod.

ROTATING

Two standard styles—Type R with cast iron body; Type K with lightweight aluminum body. Bore 1½" to 20" stroke 1" to 2". Longer strokes special.

AIR CYLINDERS • AIR-DRAULIC CYLINDERS • AIR and HYDRAULIC PRESSES • COLLET GRIP TUBE FITTINGS • SPARK PLUGS • RUBE-FLOW COOLANT PUMPS • HYDRAULIC POWER UNITS • HYDRAULIC CYLINDERS • HYDRAULIC CONTROL VALVES • AIR CHUCKS • AIR CONTROL VALVES • AIR CYLINDERS

LOGAN MANUFACTURES 6,975 STANDARD CATALOGED ITEMS • CATALOG ON REQUEST

Consult Logan for your Special Heavy-Duty, Mill Type Cylinder requirements.

LOGANSPORT MACHINE CO., INC.
813 Center Avenue Logansport, Indiana

If you write maker identify as IEN - 8755

Looking for VALVES?

Ledeen VALVES Ready for Work!

Hand Operated • Foot Operated • 2-position Power Operated 3-position Power Operated • Solenoid Operated • 2 or 3-position Momentary Energizing • Continuous Energizing • Safety Energizing Exhaust to Neutral Cycle • Standard Cycle • Manual return to Neutral or Reverse • Spring return to Neutral or Reverse • Finger Pilots Cam Pilots • Air or Gas Pilots • Solenoid Pilots. Available in sizes from ¼" to 1¼" standard pipe connections.

Standard Ledeen disc-type valves are positive in operation, have few moving parts, require very little maintenance, are built to last for millions of cycles.

Ledeen Valves for Longer Life

Write for Bulletin 1010.

VALVES
CYLINDERS
VALVE ACTUATORS
AIR-HYDRAULIC
PUMPS & BOOSTERS

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

If you write maker identify as IEN - 8756

DON'T WAIT 'TIL TOO LATE

Model 218

Clean plants get those important defense jobs. Get your plant cleaned up now. A week or month from now may be too late.

Send for important Doyle Vac-It information today. There's no obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Mich.

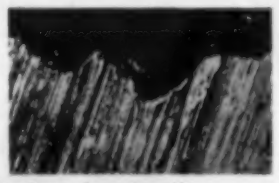
If you write maker identify as IEN - 8757

A cutting tool is no better than it's edge!

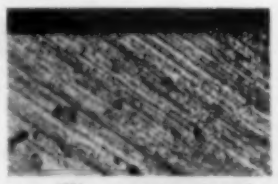
INDIA® & HARD ARKANSAS* Oilstone Files

When cutting edges break down, become dull and fail to cut stock as quickly and smoothly as modern production demands, regrinding is necessary to renew original effectiveness. Regrinding is only part of the job. Master mechanics and tool makers know that proper sharpening calls for hand stoning. They know that tools cut faster and longer when final stoning is done with INDIA & HARD ARKANSAS Oilstone Files. There's a size and shape for any job. Ask your distributor for them.

WRITE FOR HELPFUL BOOK on the advantages of hand-stoning cutting tools. Address Behr-Manning, Troy, N. Y., Dept. IEN-8.



Cutting edge of milling cutter as commonly reground (100X)



Same milling cutter surface finished on top and hand stoned on face (same magnification)

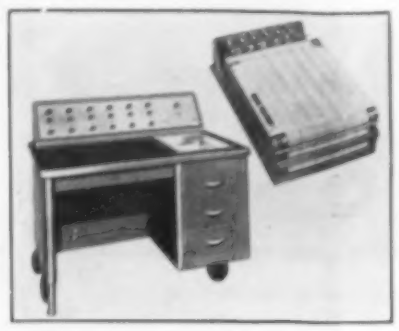
*Trade-mark O-7

BEHR-MANNING INCORPORATED Division of NORTON Company
▲ COATED ABRASIVES ▲ SHARPENING STONES ▲ PRESSURE-SENSITIVE TAPES

If you write maker identify as IEN - 8758

Testing - Six channel oscillograph in wheel equipped console, six speeds

Source: PHOTRON INSTRUMENT CO.
6516 Detroit Ave., Dept. IEN, Cleveland 2, Ohio



Specifications on request

Model F6C is a new console assembly of a six-channel oscillograph for curvilinear ink or electric recording or rectilinear ink recording. The console is available with ac. or dc. high gain or dc. low gain or strain amplifiers. The oscillograph chart feeds through an opening into a drawer that can be pulled out to remove a completed record. The casters are swivel and stationary design. The two legs on the left hand side of the console can be lowered to hold the assembly in stationary position.

A Plexiglas cover protects the oscillograph and permits reading it from a sitting or standing position. Six chart speeds are from 0.5 to 25 mm. per second. Manual control provides three speeds between 0.5 and 2.5 mm. per second with an electrically operated 10 to 1 changer.

If you write maker identify as IEN - 8759

Drying - Desiccant dehydrator to dry high pressure air supply

Source: HANKISON CORPORATION
951 Banksville Road, Dept. IEN, Pittsburgh 16, Pa.

Assures dry air

Model CM-15-3, with rated supply of 15 cfm. at 3,000 lb. and 70 deg. F., and Model CM-25-6, rating 25 cfm. at 6,000 lb. and 70 deg. F., are new units that have been added to the Model CM-1 Dehydrafilter, previously described IEN-7018-54. Supply air enters at the top of the housing to pass through a cartridge made of plastic coated aluminum filled with a desiccant that can be reactivated. Dry air leaves through the top. A "Mirror Vue" saturation indicator tells when the cartridge needs replacement or reactivating. At rated capacity, the cartridge will last for a week or more. It can be changed without tools in a minute or two. Overall height is about 22½ inches. Pipe connections are ½ in. for both units.

If you write maker identify as IEN - 8760

Nylon braided cord is now available from John H. Graham & Co., 105 Duane St., Dept. IEN, New York 8, N. Y., for use as a mason's line, chalk line, plumb line, drapery cord, shoe lace, pull cord. Sizes 18 and 21 are wound on 100-ft. spools. Both sizes are also available in 250, 500 and 1,000 ft. spools. The cord is white in color. It looks clean and stays that way. It will not absorb moisture, dirt, dust. It is resistant to attack by acids, alkalis, mold and mildew.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8761

New! Atkomatic SOLENOID Stainless Steel Direct Lift Valve

to 5000 P.S.I.

Write for Bulletin No. 100

Rugged, simple, compact, heavy-duty, two way valve for broad industrial applications. Assures continuous service, nothing to wear out, has only two moving parts. Instantaneous action.

Features higher pressures, greater corrosion resistance. ⅛ and ¼ inch pipe sizes, orifices 1/16 to 3/16 inch diameter. Bodies are 303 Stainless, Solenoid armature is 416 Stainless.

Pressures: 5000 P.S.I. to 150° F. maximum, 2500 P.S.I. to 475° F. maximum. Paper insulated coils up to 180° F., glass insulated, silicone impregnated up to 475° F.

ATKOMATIC VALVE COMPANY
545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN - 8762

REDUCE POWER BILLS!
CUT WIRING, TRANSFORMER AND SWITCHGEAR COSTS in new installations
AVOID REWIRING

with

SPRAGUE "ON-THE-SPOT" *Power Factor* CAPACITORS

Sprague power factor correction capacitors can save you real money in installations, large or small! They are easily connected, reduce line amperage and thus go far toward reducing costs. Your circuits will handle considerably more load if Sprague Capacitors are installed at your motor terminals—and no separate fused switches are required!

Get this Guide!

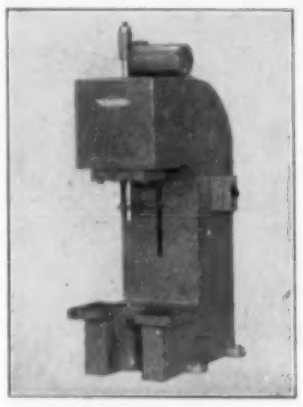
28 pages replete with PFC money-saving suggestions and installation data. Ask for guide 508

SPRAGUE ELECTRIC COMPANY
165 Marshall Street • North Adams, Mass.

If you write maker identify as IEN - 8763

AIR-HYDRAULIC PRESS

Two models deliver 2½ and 5½ ton from a 100-lb. shop air line



Multiplies pressure 50 and 110 times.

This press provides controllable hydraulic action for forming, flanging, marking, riveting, broaching, crimping, staking. It operates under effortless valve or pushbotton control. Stroke length is a little over 5 and 6 inches. Adjustment is through 2 inches. Throat is 6¼ inches. Base measures 9½ by 18 inches and 11 by 21 inches.

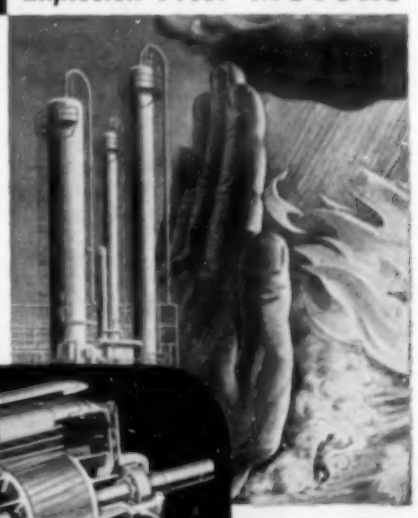
Catalog on request

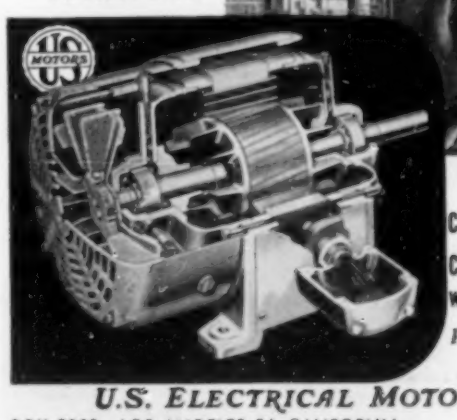
AIR-HYDRAULICS, INC.
809-13 Belden St. Jackson, Mich.

If you write maker identify as IEN - 8764

U.S. TOTALLY-ENCLOSED *Explosion-Proof* MOTORS

SAFE *for dangerous damp and dusty locations*





Class I—Group D
Class II—Groups F-G
with or without fan

Request Bulletin

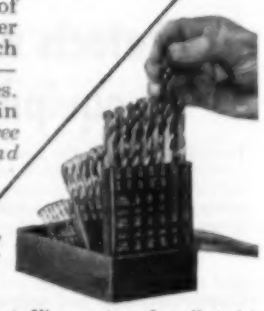
U.S. ELECTRICAL MOTORS, Inc.
BOX 2058, LOS ANGELES 54, CALIFORNIA MILFORD, CONN.

If you write maker identify as IEN - 8765

Drills at your fingertips— HUOT DRILL DISPENSER

Why rummage through a box full of drills when the Huot Drill Dispenser will keep them sorted by sizes? Each compartment holds many drills—several dozen in the smaller sizes. Beautiful light gray hammerlin baked enamel finish. *Made in three models for fractional, number and letter drills.*

Write for Drill Dispenser Bulletin



HUOT DRILL INDEX

The simplest filing system for all twist drills. Panels fold into container like pages of a book. Seventeen models for drills from No. 80 wire gauge to 1-inch size.

HUOT

HUOT MANUFACTURING CO.
565 North Wheeler Street, St. Paul 4, Minn.

If you write maker identify as IEN - 8766

WHICH OF THESE CHARACTERISTICS ARE ESSENTIALS ON YOUR REMOTE CONTROL JOBS?

Accuracy . . . High Load Capacity . . . Adaptability . . . Freedom from Trouble . . . Long Life . . . Flexibility . . . these are some of the qualities of **ACCO TRU-LAY PUSH-PULL FLEXIBLE CONTROLS** that have made it possible to improve the operation of literally hundreds of mechanical products (list on request). Full description of this versatile REMOTE CONTROL is given in our **DATA FILE** available for your further study.

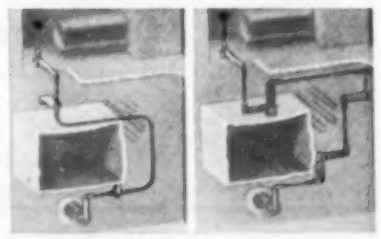
ACCURACY is inherent in the basic design, and in the standards of quality and precise dimension that control the manufacture of TRU-LAY PUSH-PULL CONTROLS. These are precision products, not gadgets.

VERSATILITY of this fine remote control can best be illustrated by citing some of the jobs it handles well . . . **HOT** jobs on jets and industrial furnaces . . . **COLD** jobs down to —70° F. . . . **WET** jobs (the conduit can be completely immersed) . . . **DIRTY** jobs . . . **ABRASIVE** jobs . . . **CORROSIVE** jobs . . . **HEAVY, TOUGH** jobs up to 1,000 lbs input . . . **LIGHT DUTY** jobs . . . **REMOTE** jobs 150 feet or more from the control point . . . these units are frequently and successfully used in conjunction with electric, hydraulic and air controls . . . are thoroughly effective under almost any operating condition.

"SOLID as a rod but FLEXIBLE as a wire rope" aptly describes TRU-LAY PUSH-PULL CONTROLS. This *flexibility* provides positive, remote action whether anchorages are fixed or movable . . . it damps out noise and vibration—protects delicate instruments . . . it permits ease of handling and shipping even when assemblies are 100 or 150 feet long . . . it avoids the risk of damage always present with solid tubular controls that must be preformed to position . . . and flexibility greatly simplifies installation of controls by reducing the number of working parts and by making it possible to snake around obstructions. . .

to give you this simple and effective assembly

. . . rather than this complex (and expensive) series of linkages



ADAPTABILITY to all sorts of mechanical situations explains, in large measure, the wide-spread application of TRU-LAY PUSH-PULLS. Standard anchorages, fittings and heads have been designed that meet requirements on approximately 80% of the installations. Simple modifications of these standards, or minor changes in your own design, cover almost every special situation. Our engineers have the know-how on such matters.

FREEDOM FROM TROUBLE and **LONG LIFE** are assured even under exceptionally adverse operating conditions because of such things as . . . full protection of the flexible, inner, working member by the tough flexible conduit . . . lubrication of the inner, working member *for life* during assembly . . . seals that keep moisture, dust and other foreign matter out of the unit . . . cold swaging of fittings that makes them integral parts of the control unit. (Full construction details in our **DATA FILE**). We have never heard of a TRU-LAY FLEXIBLE PUSH-PULL CONTROL wearing out in normal service.

Whether your interest is in a single application of this versatile PUSH-PULL CONTROL, or in its inclusion as a component of the product you manufacture, the six booklets and bulletins in this **DATA FILE** will answer your further questions, and will also provide you with the means of defining to us the application you may be interested in.

WRITE for a copy, without obligation

DATA FILE

ACCO

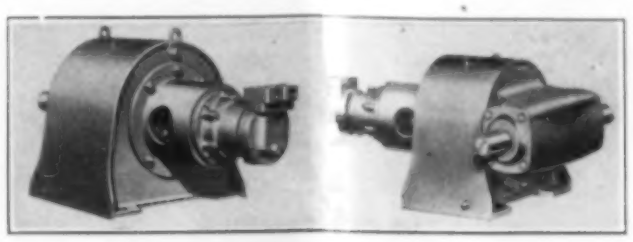
AUTOMOTIVE and AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

601 Stephenson Bldg., Detroit 2
2216 South Garfield Ave., Los Angeles 22 • Bridgeport 2, Conn.

If you write maker identify as IEN - 8768

Drive - Hydraulic motor and speed reducer, 1 to 20 hp. ratings

Source: OILGEAR COMPANY
1585-B W. Pierce St., Dept. IEN, Milwaukee 4, Wis.



For speed control accuracy to 0.1 per cent

Oilgearducer trade names a new integral assembly of the company's Type-H constant displacement axial piston motor and a Falk speed reducer. The motor is available in five sizes between 1 and 20 hp. The reducer is made in single, double, triple and quadruple reductions. Ratio combinations provide maximum output speeds from 1.7 to 1,170 rpm. Output torque, on normal continuous duty, ranges from 42 to 41,500 in. lb. based on a pressure of 1,100 pounds. Starting and peak torque, on intermittent duty, rate as much as 60 per cent higher than the continuous duty ratings.

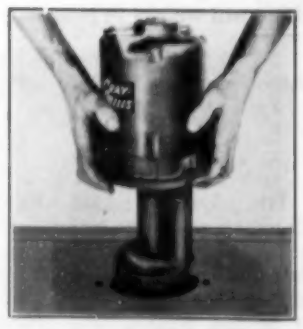
The illustration, to the left, shows a 20-hp. assembly with a reducer providing a ratio of 38.41 to 1 for speeds to 28 rpm. and continuous torque to 40,000 inch pounds. Similar concentric units, with oil tight shaft seals, are available for vertical wall mounting and, with round face flanges, for floor mounting and for vertical shaft applications. The illustration, to the right, shows a 20-hp. assembly with a reducer providing a double right angle output shaft for horizontal, vertical or angular position drive.

A combination of the new Oilgearducer and the Oilgear variable delivery pump, to supply the operating pressure, provides a variable speed unit, for speed changes in stepless progression. The equipment also provides cushioned and controlled acceleration and deceleration, quick reversal, constant torque, hydrodynamic braking, continuous service on reversing, starting, stopping and frequent speed changes, safe operation in hazardous locations, automatic overload protection.

If you write maker identify as IEN - 8769

Pump - Motor driven centrifugal for coolant service, 17 gpm. at 12 feet

Source: GRAYMILLS CORPORATION
3705 N. Lincoln Ave., Dept. IEN, Chicago 13, Ill.



Easy to install

Series H-6000 is a new immersion design in the company's line of motor driven centrifugal pumps. Its flange mounts through an opening in a coolant tank or sump to present the discharge connection flange above the integral mounting flange. Two standard immersion lengths are 6½ and 8½ inches. The pump will handle liquids containing abrasives and will pump liquids with a range of viscosity. There is no metal-to-metal contact between the impeller and the housing. The shaft is enclosed in protected position.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8770

Specify GM PRECISION-ENGINEERED

SERVO MOTORS

RELIABLE PERFORMANCE
RUGGED CONSTRUCTION

ACTUAL SIZE

In the operation of—

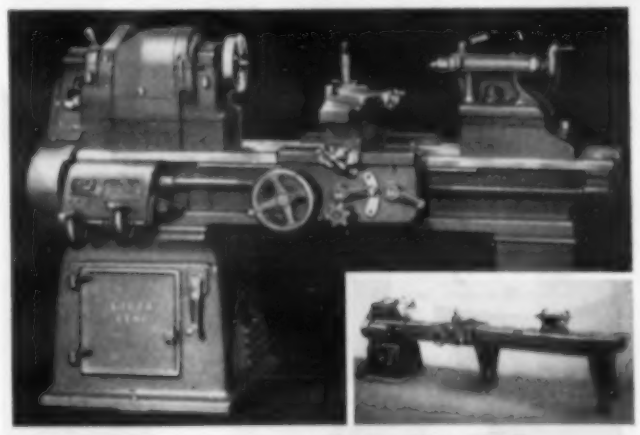
- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibration and altitude. Available in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles. Write today for complete information.

Another product of GM LABORATORIES • Inc.

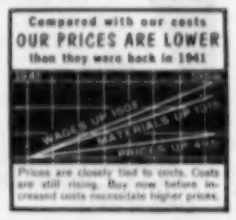
4334 NORTH KNOX AVENUE CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 8771



24" Swing for BIG Jobs

A general purpose precision lathe for large diameter jobs, such as boring jig plates, turning and boring wheels, machining pulleys, turning brake drums, and similar work. Although this lathe has ample capacity for large awkward jobs, it is not too heavy and cumbersome for efficient operation on small parts. Swings 25⅛" over bed, 18¼" over carriage, 16 spindle speeds 15 to 900 r.p.m., between centers up to 102". Prices from $2437.00 depending on bed length and equipment. Write for catalog.



SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

If you write maker identify as IEN - 8772

INSULATED WIRE LEADS FINISHED AUTOMATICALLY

ARTOS CS-6 MACHINE:

- *Completes 3000 per hour*
- *Strips one or both ends*
- *Takes all types of wire*

YOU'LL PRODUCE uniform, perfect wire leads at high speed on this automatic machine.

In 15-in. lengths, you can get 3000 leads per hour . . . accurately measured and cut . . . stripped at one or both ends up to 1½ in. Other lengths in proportion.

Unskilled help can operate machine. Spoilage is almost eliminated—there's no nicking of solid wire or cutting of strands. Set-up is easy for different wire lengths and types.

WRITE FOR BULLETIN
Get the complete story—write for Bulletin 35-C on Artos Model CS-6 machines.

ARTOS ENGINEERING CO. *Automatic Wire Cutting and Stripping*
2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as IEN - 8773

KELLER AIR MOTORS

- Compact design with high power-to-weight ratio. Enclosed construction.
- Efficient with either high or low air pressure.
- Positive-acting, piston-type, constant torque motors with infinitely variable speed in either direction.
- ½ To 2¾ hp in a wide range of speeds and torques.

Send for illustrated descriptive Bulletin No. 70

Keller Tool Company
1329 Fulton St.
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 8774

the inside word on Abart Quality

RATINGS
Very conservative
MOUNTINGS
Single surface mounts in any position
TORQUES
Absorbed by heavy cast gear case
RATIOS
Standard and specials
GEARS
Nickel Bronze
WORMS
Integral with shaft; hardened and ground
BEARINGS
Sealed Ball Bearings
SEALS
Neoprene
SHAFTS
Special tough Alloy Steel (200-300,000 Tensile), ground
HOUSING
Semi-steel, precision machined
ENCLOSURES
Drip-proof. Totally enclosed

• COMPACT
• EFFICIENT
• LONG-LASTING

ABART SPEED REDUCERS

Over 75 types and sizes—spur, worm and combination. Ratings from 1/50 to 168 hp., with ratios up to 10,000 to 1.

Specials on application.

Write for pocket-size Abart catalog today.

Abart GEAR AND MACHINE CO.
4823 West 16th Street • Chicago 50, Illinois

If you write maker identify as IEN - 8775

#5 Ware Room, Tin Plate Mill, Jones & Laughlin Steel Corporation, Aliquippa, Pa.
Aluminum Paint: James B. Sipe & Company

ALUMINUM PAINT IMPROVES INVENTORY CONTROL IN THIS J&L WARE ROOM

Lighting efficiency is an important factor in this J&L Tin Plate Ware Room where inventory is taken each day. According to Clair Figley, J&L Tin Plate Warehouse Foreman, adequate lighting between the high rows of cartons was always a problem. That is, until the roof and supporting structures were painted with highly reflective aluminum paint.

Because of the extra brightness provided by aluminum paint, markings on all cartons are now clearly visible, even in the aisles where there are no lights directly overhead.

Aluminum paint's brightness and high reflectivity make it the ideal coating for industrial uses such as this where good visibility is essential.

ALCOA does not make paint, but ALCOA Aluminum Pigments are used in more aluminum paints than any other brand. Special formulas have been developed by your paint manufacturer to solve individual problems. Paints made to these formulas actually cost you less, last longer, give utmost protection against heat, cold, sun, rain, smoke and fumes. Write us today for FREE BOOKLET, *Painting With Aluminum.*

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

Paint Service Bureau, Aluminum Company of America
1787-H Alcoa Building, Pittsburgh 19, Pa.
Please send me your FREE BOOKLET, *Painting with Aluminum.*
I plan to paint _____
Name _____
Company _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN - 8777

Wheels - Sintered powder metal, made to order in sizes to 3 by 2 inches

Source: BASSICK COMPANY
439 Howard Ave., Dept. IEN, Bridgeport 2, Conn.

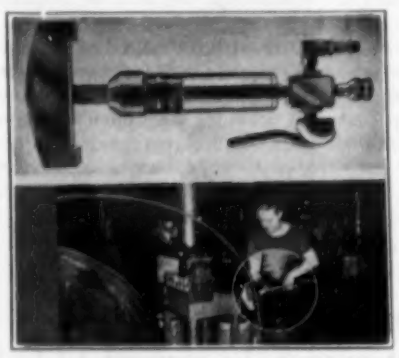
Ask for Bulletin SM-54

The company announces availability of a line of wheels made of sintered powdered metal, previously developed for its own use in its casters. Prices range from 3 to 30 cents per part depending upon size, quantity and metal requirements. Iron base and brass rollers and wheels can be made to a maximum diameter of 3 in. with a 2-in. hub length and with bore to specification. The finished parts are precise to dimension. They are mechanically strong and have physical properties comparable with parts made of similar solid metals machined.

If you write maker identify as IEN - 8778

Straightening - Hydraulic head for leading ends of heavy coiled rod

Source: MANCO MFG. COMPANY
Grove & West, Dept. IEN, Bradley, Ill.



Rates 10 ton

Rod Straightener is a new tool, in the company's Guillotine hydraulic line, for application on the ends of rod supplied in coils to feed into drilling dies and heading machines. It will straighten an 8-in. section of rod and, by successive application, will straighten a 4-ft. length in about 15 seconds. Rod capacity is $\frac{5}{16}$ to $1\frac{1}{16}$ inches.

Control is by a hand or foot valve. Power is supplied by the company's 2-hp. motor driven hydraulic pump. It is available for stationary or portable use. The head weighs 18 pounds.

If you write maker identify as IEN - 8779

Hinged rack, added to the Colson hand truck, adapts the truck to carrying large objects. The rack hinges back against the truck frame when it is not needed. The truck, equipped with the rack, is available for about $17 from Colson Corporation, 340 Cedar St., Dept. IEN, Elyria, Ohio.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8780

QUALITY – EQUAL TO ANY CONSTRUCTION

BROOKVILLE BUILDINGS cost 30% less

• ALL STEEL
• FULLY INSULATED

Here at last is a pre-engineered building fully equivalent to the finest brick and masonry construction—*yet selling for 30 percent less.* These fully insulated, all-steel structures are erected with pre-fab speed, but are individually tailored to your requirements.

Single and multiple structures are available in an amazing choice of spans, lengths, heights, door and window arrangements, and ready as you desire for architectural frontal and interior treatment.

Write for Folder A for full details.

BROOKVILLE MANUFACTURING COMPANY
P.O. BOX 67 BROOKVILLE, PA.

If you write maker identify as IEN - 8781

SAFE OUTLET ···protects wiring or equipment···

Install *Safelets* on the assembly line . . . at test benches . . . wherever power tools or fractional horsepower motors are used. Plugged into *Safelet* receptacles, motors are dependably protected against overloads, short circuits, locking. Or, for use with soldering irons and other small appliances, the *Safelet* guards branch circuit wiring . . . limits power interruptions to the single receptacle.

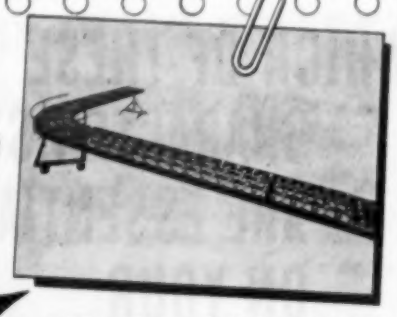
The Heinemann Circuit Breaker in the *Safelet* interrupts shorts and overloads instantly, yet allows safe passage of starting currents. Current capacity and tripping points are not altered by temperature.

Available in ratings up to 15 amps. or 1 hp, with or without pilot light, and in several female receptacle styles. WRITE FOR BULLETIN 1010.

HEINEMANN ELECTRIC COMPANY
150 Plum Street, Trenton 2, New Jersey

If you write maker identify as IEN - 8782

good idea!



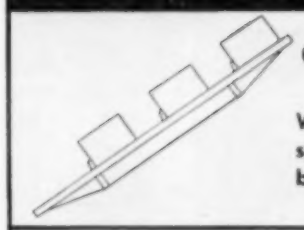
PICK THE "RIGHT" WHEEL CONVEYOR for your specific needs designed for smooth flat bottom merchandise. For heavier duty jobs and semi-permanent installations, choose ARR-O-WHEEL all steel, low cost, rugged, high quality conveyor. For loading — unloading jobs, get easy-to-carry sections of ARR-O-LITE aluminum; easily set up, quickly torn down and stored in small space. For lightness, strength and long wear, get ARR-O-LITE aluminum frame with steel wheel. Available with standard accessories, curves, spurs, Y curves, hinges, case stops and stands. Put the Force of Gravity to work for you — write direct today.

Full facts on all ARROW power and gravity conveyors. Write to:

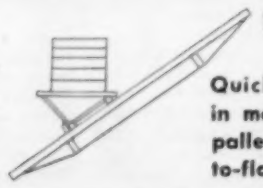
arrow PRODUCTS, INC.
108 Arrow Bldg. 417 Front, N.W. Grand Rapids, Mich.

If you write maker identify as IEN - 8783

WEHLE all steel SPACE-SAVER FLOOR-TO-FLOOR CONVEYORS



CARTON & PACKAGE TYPE
Will operate in limited space. Positive action — no belts. Takes less floor area.



PALLET TYPE
Quickest method in moving loaded pallets from floor-to-floor.

HAMPER TYPE
Conveys merchandise in hampers with wheels from floor-to-floor. Fast.

For further information and specifications, write today. No obligation, of course.

WEHLE CONVEYOR COMPANY
201-203 WATER STREET • BINGHAMTON, N. Y.

If you write maker identify as IEN - 8784

LAUGHLIN Double Clevis Link

Connects chain to links, rings, hooks. Make slings, hitches, repairs in the field - **no welding - no blacksmith work**

FAST - SAFE - EASY No special tools needed; just remove cotter and bearing pins, attach clevis and replace pins. New exclusive cotter guard protects your hands. Stronger than proof coil, BBB and high test chain.

1/4", 5/16" - 3/8", 7/16", 1/2" sizes.

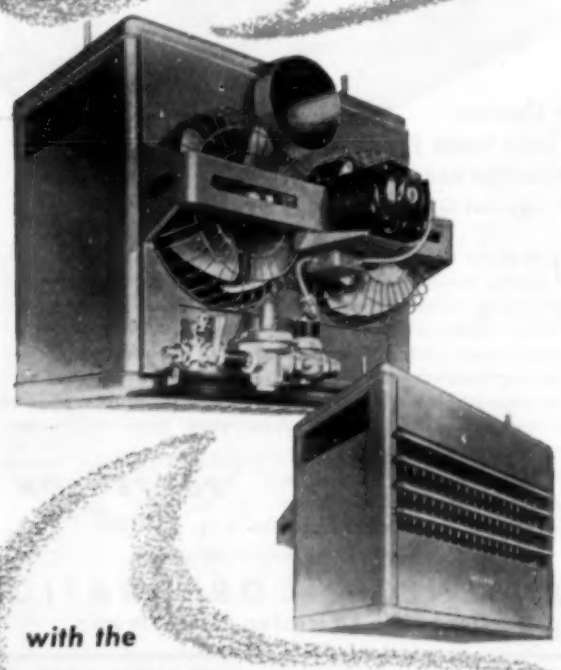
*DOUBLE CLEVIS LINK

WRITE FOR CATALOG 155, showing complete line of 1500 types and sizes of drop forged wire rope and chain fittings.

THOMAS LAUGHLIN COMPANY
81 FORE STREET, PORTLAND, MAINE

If you write maker identify as IEN - 8785

NEW Reznor's 250,000 BTU Gas Unit Heater



with the

Exclusive Twin-Fan Design

Now there's more proof of Reznor engineering leadership—a new 250,000 BTU twin-fan heater. The first of its size to be offered by any nationally-recognized unit heater manufacturer. The first of any size to feature twin-fan design.

The two fans, operating from a single heavy-duty 1/4 HP motor, provide more effective air distribution at a much lower noise level than is possible with a single larger fan. The new unit moves 3200 CFM with an air throw of 90 feet.

Tremendous capacity and power—but still so compact you can fit it into almost any out-of-the-way spot. Height of the US250-F is only 33 1/2", the same as on Reznor's 175,000 BTU unit. The new 250,000 BTU heater is 36" wide and 40 3/16" deep overall; cabinet depth is 24 5/8".

For more details on this revolutionary new unit, write today for your copy of spec sheet NPS-5401A. For the whole story on the complete Reznor line see the Reznor catalog in Sweet's Plant Engineering and Industrial Construction Files.

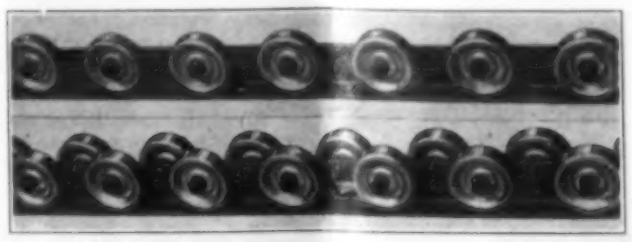
The Reznor Manufacturing Company
10 Union Street, Mercer, Pennsylvania

REZNOR
THE WORLD'S LARGEST-SELLING GAS UNIT **HEATERS**

If you write maker identify as IEN - 8787

Conveying - Angle mounted wheels for application singly or in pairs

Source: HARRY J. FERGUSON COMPANY
115 West Ave., Dept. IEN, Jenkintown, Pa.



For permanent or temporary installation

Storage racks, shipping and receiving platforms, assembly lines, are representative points for application of this new assembly of a supporting angle and a line of steel ball bearing wheels. Each section is a 10-ft. length carrying 2 by 5/8-in. wheels on the inside or the outside angle face. Wheel centers can be 1 1/2, 2, 3, 4 or 6 inches.

If you write maker identify as IEN - 8788

Lubricating - Spray liquid dries to form lubricant film on metal

Source: GILRON PRODUCTS CO.
452 Hanna Bldg., Dept. IEN, Cleveland 15, Ohio

Technical data upon request

Drawcote 1044 is a new mixture of powder and water that almost air dries following spray application on a metal surface. It can be applied also by brushing, dipping or rolling. It forms a smooth uniform surface, after force drying, that acts as both a protective and lubricating film. It excludes moisture. It permits visual surface inspection because it is transparent. It prevents blanks from adhering to each other as they are fed into a press. It is non-toxic, non-volatile, non-irritating and odorless, dry and non-oily. It is shipped in powdered form ready to mix with water.

If you write maker identify as IEN - 8789

Ladder - Extruded aluminum with steps on two sides, 4 to 12 feet

Source: LOUISVILLE LADDER CO.
1101 W. Oak St., Dept. IEN, Louisville 10, Ky.

Reinforced design

Aluminum channels, employed as side rails in this new ladder, are joined at the top with plated steel hinges and are braced at the bottom step. Each step is double riveted to the channel flanges. The steps, also made of extruded aluminum, present serrated surfaces for firm footing. Rubber pads on the channel bottoms complete the assembly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8790

Radiant Heat

If your problem involves:

VULCANIZING RUBBER • DEGREASING METALS
BAKING VARNISH • HEAT TREATING LEATHER
DEHYDRATING FOOD • PASTEURIZING FOOD
DRYING LACQUER, INK, PAINT, CERAMICS
GLASS, FIBRE, COMPOSITION OR IF YOUR PROBLEM REQUIRES CONTROLLED HEAT FOR OTHER APPLICATIONS.

And if you now use:

AIR DRYING • GAS, OIL OR ELECTRIC HEAT

You will be amazed by the increased quality control and big savings in money, time and labor when you use INFRALITE RADIANT HEAT.

WITHOUT OBLIGATION, ASK OUR REPRESENTATIVE TO CALL, OR WRITE FOR BULLETIN No. 54

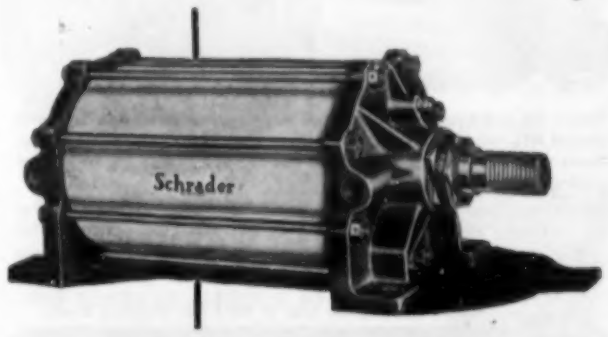
THERMEX *Company, Inc.*
537 BERGEN ST., HARRISON, N. J.
HU 5-2323

If you write maker identify as IEN - 8791

The Best Muscles in Your Plant

This compact, powerful Schrader Air Cylinder can eliminate costly mechanical movements . . . tiring, slow manual labor . . . space wasting mechanisms in many spots on your production machines. Leg mounted cylinders, shown here, will deliver a powerful push, pull, or push and pull, parallel to the mounting surface.

Cylinder action can be controlled manually or automatically. Speed, force and cycle time are all readily controlled by Schrader operating valves and accessories. Schrader cylinders are available in any type of mounting up to 8 inch bore in any stroke. Full details are in the Schrader catalog. Write for it today.

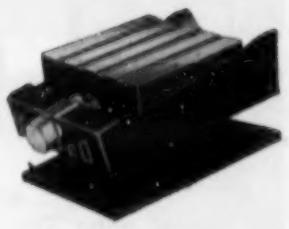


A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-34, Brooklyn 38, N. Y.

If you write maker identify as IEN - 8792

Improved Empco JACKS are stronger!

SAVE TIME SETTING UP AND LEVELING YOUR MACHINES WITH FAST, ACCURATE, SELF-ALIGNING LEVELERS!



Style JD Wedge type

You can meet hurry up demands for relocation of machinery quickly and easily with improved EMPCO JACKS. You just raise the machine enough to slip EMPCO JACKS under the base (the number depending on the size of the machine). Turn the adjusting screw up or down until the level indicator reads "zero," and the job's done.

To reduce vibration, VI-SORB mounting pads are available with each style EMPCO JACK. Write for specifications and prices today.

Style JS Screw type

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN - 8793

DO YOU WANT TO CLEAN FASTER, BETTER, EASIER AND AT LOW COST?

That's a big order, but the super-efficient CLEMENTS-CADILLAC cleaning tool can do it for you—has done it for industry, business and institutions everywhere . . . for more than 40 years.

Just ask your mill supply dealer, or write us for proof. No obligation on your part.

"Most Useful Tool in the Plant"

CLEMENTS-CADILLAC COMBINATION BLOWER-SUCTION CLEANERS

CLEMENTS MFG. CO., 6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.

USED BY BUSINESS AND INDUSTRY FOR MORE THAN 44 YEARS

If you write maker identify as IEN - 8794

Lightweight Pallet Truck is Easiest To Pull . . .

. . . never needs greasing

Here's the best hydraulic pallet truck buy in years! New Lewis-Shepard Model HPL weighs only ½ as much as standard trucks . . . handles loads up to 2000 lbs. . . . costs you less to buy . . . and it's the easiest pulling truck made!

Factory-sealed ball bearings in the HPL eliminate periodic greasing . . . virtually eliminate all maintenance . . . insure longer truck life!

Get all the facts on this new, low cost, lightweight truck. Write for Circular 26A . . . TODAY!

The Most Complete Line of Materials Handling Trucks

LEWIS-SHEPARD

733-8 WALNUT ST., WATERTOWN 72, MASS.

The "MASTER" Line

If you write maker identify as IEN - 8795

WHEN LIGHTS GO OUT EXIDE® LIGHTGUARDS® GO ON INSTANTLY...AUTOMATICALLY!

NEW MODEL M

Whenever normal lighting is interrupted—no matter what the reason—you get adequate emergency lighting INSTANTLY. Your customers and employees are safeguarded against injuries; property damage, pilferage, loss of process control is minimized. Exide Lightguards are UL-approved and can be plugged in anywhere. Operates instantly—each lamp illuminates up to 10,000 sq. ft. Exide battery in one lamp unit provides power for more than 8 hours of continuous lighting. Once normal power is restored, automatic controls recharge the dependable, long-life, trouble-free Exide battery.

WRITE for facts on why Exide Lightguards guarantee more protection for every dollar you invest in such equipment.

Exide INDUSTRIAL DIVISION,
The Electric Storage Battery Co., Philadelphia 2, Pa.

If you write maker identify as IEN - 8796

The type Tapping Screw you require will vary with: 1. kind of material; 2. thickness of material; 3. the method used for making the hole.*

Lamson Tapping Screws are precision made for maximum holding even in thin material, fully hardened to permit the thread crests to form clean threads without stripping hole. Available in a wide range of head and point combinations. A "special" Tapping Screw to many . . . is a "stock" item at Lamson

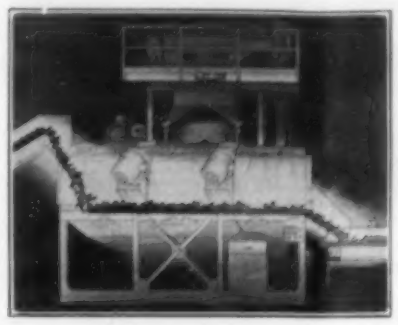
This information is available in tabular form for easy reference. Write for as many copies as you need.

The LAMSON & SESSIONS CO.
1971 West 85th St. • Cleveland 2, Ohio
CLEVELAND AND KENT, OHIO • BIRMINGHAM • CHICAGO

If you write maker identify as IEN - 8797

Cleaning - Abrasive blast machine for work moving through revolving drum

Source: PANGBORN CORPORATION
230 Pangborn Blvd., Dept. IEN, Hagerstown, Md.



For continuous action

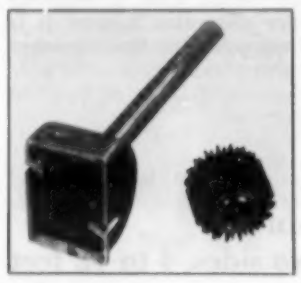
Continuous-Flow Type GO designates new design in the company's Rotoblast line of abrasive cleaning equipment in which work feeds continuously in at one end and out at the other. The equipment combines tumbling and blast action to clean and smooth the casting surfaces. Abrasive is reclaimed before the cleaned castings are discharged. Fines and other refuse are removed from the reclaimed material which then is returned to be used again.

Five sizes, with reference to the drum diameter, measure 48 to 72 in. and take work measuring 11 to 26 in. in maximum dimension. The smallest machine will clean 50 to 60 cu. ft. of gray iron castings per hour or 30 to 40 cu. ft. of forgings. The largest will handle 300 to 400 cu. ft. of gray iron castings and 150 to 250 cu. ft. of forgings.

If you write maker identify as IEN - 8798

Grinding - Hand dressing tool for wheels used in heavy duty service

Source: L. NEWMAN
1001 24th St., Dept. IEN, Oakland 7, Calif.

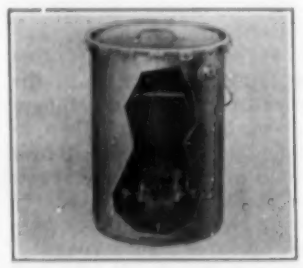


Sturdy design

Model 5 designates a new hand type grinding wheel dresser in which hardened steel cutters are mounted on sealed ball bearings to ride inside a protecting hood. The cutters can be changed after loosening two lock nuts on the outer sides of the hood and then removing retainer screws. The tool lists at $17.50. Sets of five replacement steel cutters list at $1.35.

If you write maker identify as IEN - 8799

Small parts and assemblies are loaded into the circular basket of this new Jet-Action unit which is supplied with 5 gal. of the cleaning solvent Jetisoil. An airline is connected to the valve on the side of the housing near the bottom and the compressed air sets up agitating action. In about 15 min. the work can be removed. The unit and the solvent are available from Turco Products, Inc., 6135 S. Central Ave., Dept. IEN, Los Angeles 1, Calif.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8800

CONSISTENTLY SOUND WELDS REDUCE COSTS ON WELDING LOW ALLOY-HIGH TENSILE STEELS

No Underbead Cracking

The introduction of low hydrogen electrodes virtually revolutionized welding procedures on high tensile steels. Without pre-heat or post-heat, sound welds can be produced with no danger of underbead cracking. As a leader and pioneer in this field, Arcos offers a complete line of Low Hydrogen Electrodes that assures you the maximum in quality, performance and dependability. These factors are indispensable for producing high strength welds at low cost. You get them consistently with Arcos. For more selection information on Arcos Low Hydrogen Electrodes, write for a copy of the "Arcos Selector Chart".

The ARCOS CORPORATION
1500 South 50th Street, Philadelphia 43, Pa.

If you write maker identify as IEN - 8801

—for "INSTRUMENT-QUALITY" AIR

IN COMPRESSED AIR OPERATIONS . . .

HERE'S YOUR ANSWER!

HANKISON
MODEL B-30-D
Condensifilter

Featuring the New-Economical DISPOSABLE FILTER CARTRIDGE

Dehydrate and filter ordinary plant air with a Hankison Model B-30-D Condensifilter for air of "Instrument-Quality." Condenser section removes moisture by lowering dew point of air to within 2 or 3 degrees of cooling water; low cost, disposable filter cartridge with 540 sq. in. of surface area removes even finest dirt particles. Capacity: 30 scfm at 100 psig.

Write for Bulletin B-30-D
For larger capacities, write for data on Model A-100.

HANKISON CORPORATION
350 BILTMORE BLDG. • 951 BANKSVILLE ROAD • PITTSBURGH 16, PA.

If you write maker identify as IEN - 8802

HARDWOOD LAMINATED Bench Tops

- Counter and Table Tops
- Locker Bench Tops
- Special Glued Forms

FROM the drying of the lumber in Sensenich's own kilns* to the cutting, forming and gluing of every hardwood laminated top, the highly trained Sensenich craftsmen play an important part. These skilled workmen use the finest equipment to produce high quality wood parts with thorough efficiency and economy. Remember too, Sensenich is the world's largest producer of wood propellers for personal planes. Sensenich has more than 20 years experience in conditioning, cutting and gluing wood forms to the most exacting standards.

We will be glad to quote on your requirements . . . your request will receive prompt attention.

SENSENICH

*Certified by the United States Air Force

SENSENICH CORPORATION
Dept. IN, Lancaster, Pennsylvania

If you write maker identify as IEN - 8803

JACO Horizontal STOCK REEL

LOW COST — AUTOMATIC
No motors — No belts — No sprockets

POWERED BY THE NATURAL SPRING OF UNCOILING STOCK . . .

JACO Stock Reel operates automatically . . . without attention or maintenance . . . so simple there is nothing to get out of order.

The loop of stock between the Coil and the Press Feed completely eliminates slippage, kick-back and over-run.

JACO Stock Reels handle all types of resilient coiled stock for light stampings up to 250 lb. coil weight . . . up to 36" coil diameter . . . up to 6" stock width.

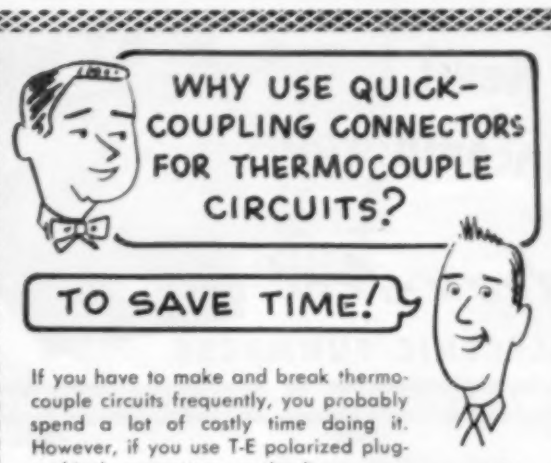
Proved in actual use by major manufacturers. Guaranteed to work on your job or money back.

Write today for full details

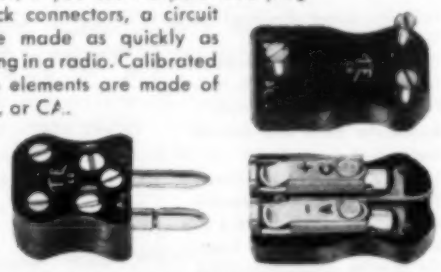
Hingham 6-0873

JACO DEVICES, INC.
91 High Street, Hingham, Mass.

If you write maker identify as IEN - 8804



If you have to make and break thermocouple circuits frequently, you probably spend a lot of costly time doing it. However, if you use T-E polarized plug-and-jack connectors, a circuit can be made as quickly as plugging in a radio. Calibrated thermo elements are made of IC, CC, or CA.



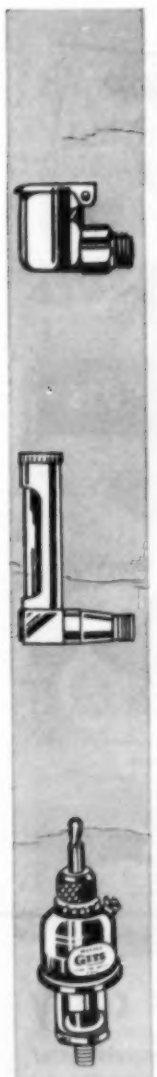
Interested? Write for Bulletin 23-Q.

Thermo Electric Co. Inc.
SADDLE RIVER TOWNSHIP, Rochelle Park P.O., NEW JERSEY
CANADA • THERMO ELECTRIC (Canada) Ltd., BRAMPTON, ONT.

If you write maker identify as IEN - 8805

Look To The Leader For Lubricating Devices

GITS



40 Years' Leadership

Yes, for 40 years GITS has been setting the standard for industry... solving tough lubricating problems...earning the confidence of manufacturers . . . it's the reason people say, "Call GITS first".

Low Cost

Yes, GITS oil cups can do a complete lubricating job for you . . . prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production . . . and GITS oil cups cost so little.

World's Largest Selection

Yes, only GITS can offer you such a wide range of standard stock sizes. From *just one* source you can get *all* lubrication devices in *any design* for *any purpose.*

Consistent Top Quality

Yes, GITS is known for uniform quality in design, materials and machining . . . this means constant, dependable performance for you. Inferior products can cost you time and money. Demand the best ...get GITS.

Write Today for FREE CATALOG *No. 60 A*
Use it as your handy reference for lubricating devices

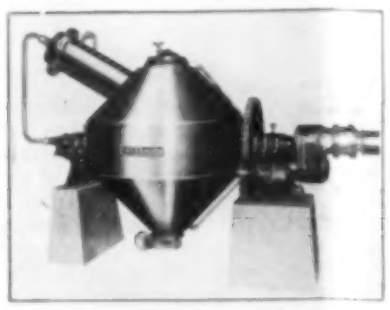
Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges, Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod Styles. Threaded or Drive-Type, Elbow or Straight.

GITS Bros. Mfg. Co.
1854 S. Kilbourn Ave. Chicago 23, Ill.

If you write maker identify as IEN - 8807

Drying - Vacuum equipment for temperature sensitive materials

Source: PATTERSON FOUNDRY & MACHINE CO.
St. George St., Dept. IEN, East Liverpool, Ohio



Publication RLC54-1

Ten sizes are available in the new Conaform vacuum dryer to provide working capacities from 1 to 235 cubic feet. Heat transfer fluid, such as hot water, steam or vapor, can be circulated at pressures to 30 lb. per sq. in. in the housing jacket. The fluid or vapor passes in through the main gudgeon and is discharged by means of a separate line through the same gudgeon. Vacuum is applied by means of a the housing revolves. Any standard pump can be used.

The conical and cylindrical deflecting surfaces of the housing wall result in constant change in location of the materials being dried, as the unit rotates, so each particle within the dryer makes positive contact repeatedly with the heat transfer surface. The particles constantly change their position as the moisture is drawn off by the vacuum.

Material to be dried is charged directly into the housing through the vacuum type charging door. When it has been dried it is discharged from the opposite end through a vacuum type discharge valve. The operation is dustless. Floor space ranges from about 3 by 4 ft. to 13 by 18 feet. Required height is about 2½ to 14 feet.

If you write maker identify as IEN - 8808

Conveying - Monorail carrier for operation in an automatic cycle

Source: AMERICAN MONORAIL CO.
13107 Athens Ave., Dept. IEN, Cleveland 7, Ohio

Built to order

Batch transfer of bulk materials between a single loading point and a specified number of discharge stations is handled by this new automatic carrier and its motor rotated bucket. The bucket is suspended from a twin hook electric hoist that rides beneath the overhead track. One end of the bucket is geared to a motor mounted on the rigid frame. It rotates the bucket to discharge its contents and carries it on through a complete revolution to bring it back to upright carrying position.

Electric controls for automatic dispatch, station selection, dumping and return are built into the assembly. The carrier is moved along the track by the company's standard pneumatic tired tractor.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8809

SAVE TIME . . . Faster production and lower labor costs
SAVE AIR . . . Reduce air consumption 92 percent
SAVE DIES . . . No damage to dies due to clogging
SAVE HANDS . . . Keep operators' hands and fingers out of danger zone
SAVE MONEY . . . Insurance premiums are lower when accidents are reduced.

QUICKLY INSTALLED—Littell Air Blast Valves can be installed on any make or size press in only a few minutes.

F. J. Littell MACHINE CO.
AIR DIVISION
4133 RAVENSWOOD AVE., CHICAGO 13, ILL.
— District Offices Detroit and Cleveland —
Write for Catalog

If you write maker identify as IEN - 8810

CUT COSTS WITH EMERSON-ELECTRIC EXHAUST FANS

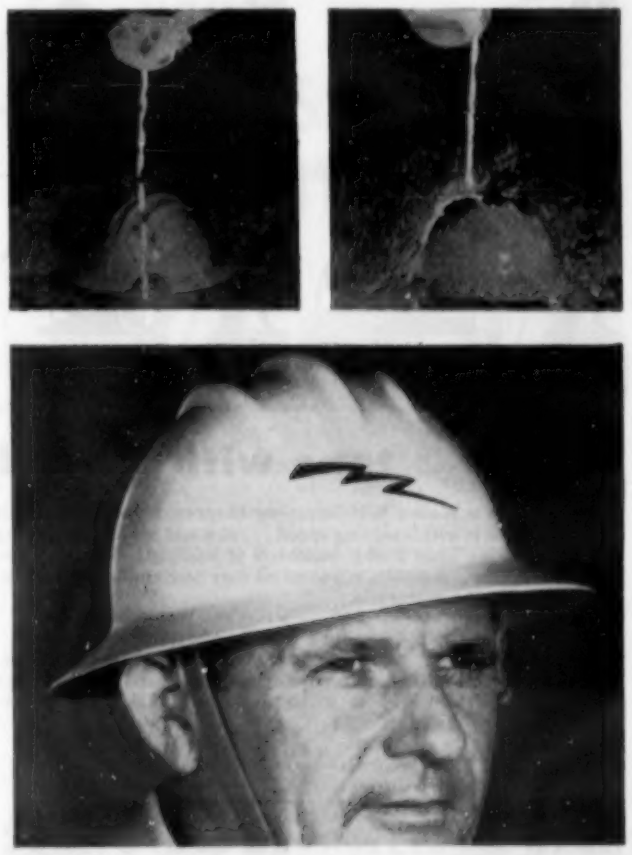
Bad air is expensive! Cut this cost with Emerson-Electric Exhaust Fans . . . designed for air-moving jobs in commercial, industrial and institutional buildings. Belt- and direct-drive models. Capacities up to 19,350 c.f.m.

Get ventilation planning data and specifications by writing for Bulletin No. 778

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

If you write maker identify as IEN - 8811



Reinforced plastic hat defies molten steel, 10,000 volts

Pouring molten steel at 3,000 deg. F. on this safety hat for 90 seconds failed to burn through it. Tested with 10,000 volts, it leaked only a harmless 5 milliamperes. It came through a 40 foot-pound impact resistance test undamaged.

That gives you an idea of the properties of material it's made from—BAKELITE Polyester Resins and glass fibers. These same reinforced plastics are being formed into housings, aircraft sections, corrosion-resistant pipe, and automobile bodies. These and other products based on BAKELITE Polyester Resins have outstanding electrical insulating properties, resistance to corrosion and impact, and a favorable strength-weight ratio. They can be given a variety of colors, and are formed with a minimum of pressure.

You get all these advantages for your product when you work with BAKELITE Polyester Resins reinforced with glass fibers. You can select from a variety of resins formulated to give the right combination of properties you need. And you can call on the Bakelite Company technical representatives and resources to help make your application a success. Write, stating your requirements, to Dept. XQ-14.

"10KV Hard Boiled" Hat produced by **Automatic Plastic Molding Co.**, Berkeley, Calif., for the E. D. Bullard Co., San Francisco 3, Calif.

BAKELITE
TRADE-MARK
POLYESTER RESINS
TRADE MARK
BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 E. 42nd Street, New York 17, N.Y.

If you write maker identify as **IEN - 8813**

Severance TOOL INDUSTRIES INC.
740 Iowa Avenue • Saginaw, Michigan

If you write maker identify as **IEN - 8814**

unload 2 tons with 1 hand

It's easy with a Roura Self-Dumping Hopper. Simple, one-man operation does it with amazing speed . . . *cuts cost of hand unloading by at least 50%*. That's why hundreds of leading industries have found it the safe, sensible, economical way to handle wet or dry, hot or cold bulky materials.

It fits securely on any standard fork or platform lift truck . . . turns it into an efficient, semi-automatic dump truck. And, remember . . . Roura makes 'em rugged . . . extra heavy gauge welded construction . . . to withstand years of toughest treatment. They're available in sizes from ½ to 2 cubic yards. Literature and other information available on request. ROURA IRON WORKS, INC., 1409 Woodland Ave., Detroit 11, Mich.

ROURA *Self-Dumping* **HOPPER**

If you write maker identify as **IEN - 8815**

BREEZE *Job-Engineered* **BELLOWS**

...Give LASTING PROTECTION Where Ordinary Bellows Fail

Breeze welded diaphragm bellows meet the operating life cycle of any equipment in which they are used *because every Breeze bellows design is individually engineered and built for the job.*

Breeze has no "stock bellows," but if you have a vibration problem in ducts, large or small, or want permanently sealed valve enclosures in any type of piping system, or need bellows for torque transmission or other uses, Breeze experience can quickly provide the answer . . . and production can meet your requirements.

A Breeze bellows is dependable because each diaphragm is designed to work well within its elastic limit. This is accomplished by thorough analysis of each application and careful design of the bellows to withstand all requirements. "Job engineering" each individual type eliminates makeshifts, assures efficient performance.

Breeze bellows are made in stainless steel, inconel, monel, nickel, steel, or other weldable alloys.

Feel free to consult us without obligation on your existing bellows requirements, or any other project where reliable welded diaphragm type bellows might solve a design problem.

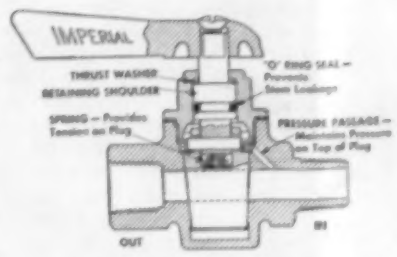
BREEZE CORPORATIONS, INC.
700 Liberty Ave., Union, N. J.

OTHER BREEZE PRODUCTS: ACTUATORS · RADIO SHIELDING · AERO-SEAL HOSE CLAMPS

If you write maker identify as **IEN - 8816**

Valve - Brass plug cock for working pressure to 300 pounds

Source: IMPERIAL BRASS MFG. COMPANY
1200 W. Harrison St., Dept. IEN, Chicago 7, Ill.



Dryseal Threads

The plug employed in this new Series 200 is made of a nickel silver alloy. It is assembled with a floating stem. A passage from the inlet side of the valve carries line pressure to the space above the plug to hold it down. A spring between the bottom of the stem and the plug assists in this action. The stem is sealed against leakage by an O-ring. It is backed up by a retaining shoulder that rides against a thrust washer in the valve bonnet.

The valve is available in ⅛, ¼ and ⅜-in. pipe threaded sizes with a female outlet and either a male or female inlet. The body carries mounting lugs. A positive stop assures full opening when the handle is turned.

If you write maker identify as **IEN - 8817**

Storing - Steel cabinet for plant or office, interlocked design

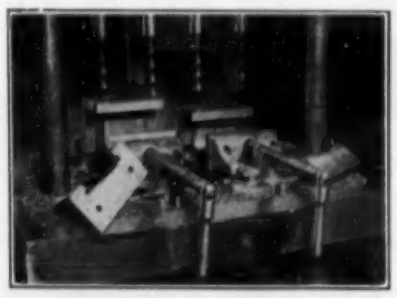
Source: STEEL SERVICE MFG. CO.
330 N. 7th St., Dept. IEN, Steubenville, Ohio

Catalog upon request

Jet-Lok trade names a new interlocking construction in which the front, sides and back of the company's new line of Steel-Pride cabinets slide together to form tight positive U-turn interlocking joints along the length of each member. The construction minimizes assembly time. It adds strength, rigidity and protection against breaking open in service. The line includes cabinets standing file high, desk high and full height for storage and wardrobes, or both, with either single or double doors. Finish is in gray or green.

If you write maker identify as **IEN - 8818**

New application of the work holding Speed Vise previously described IEN-8929-46, in multiple on a drilling machine, has enabled one manufacturer to minimize tool costs and speed a production job. Work pieces are transferred quickly from one station to the next. The vise itself is quick-acting design so the clamping screw requires very little turning to release the work. Overall vise dimensions are about 9 to 15 in. length, 2½ to 3¾ in. in height. Jaw widths are 3, 4 and 6 inches. Manufacturer is Cardinal Machine Co., 1819 Dana St., Dept. IEN, Glendale 1, Calif.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8819**

YOUR ANSWER TO FLEXIBLE TUBING PROBLEMS

PENFLEX "FLEXINEERING"

THE CORRECT TUBING...PLUS TECHNICAL AID ON EVERY JOB

is the know-how of the Penflex Engineer plus the can-do of Penflex Flexible Metallic Tubing serving you from design board right up to job installation and maintenance. It is the scientific application of the right type of steel, bronze, or aluminum flexible tubing to your air, oil, water, gas, steam, volatiles, or light solids conduction requirements. It is the specific recommendation of the right size and weight flexible tubing—four-wall interlocked or seamless welded corrugated type—in sizes from ⅛" to 24" I.D. And it is the nation-wide supply of Penflex in any quantity where you want it, when you want it.

Get This New Data Book on the complete Penflex line of Flexible Tubing, Hose, Couplings

Pennsylvania Flexible Metallic Tubing Co., Inc.,
7200 Powers Lane, Phila. 42, Pa.

PENFLEX
HEART OF INDUSTRY'S LIFE LINES

If you write maker identify as **IEN - 8820**

New! Incomparable!

dyna-trol ELECTRIC FURNACES

COMPARE THESE FEATURES

- Infinite Zone Control to 2000° and 2300°F
- Zone temperature indication by Pyrometer Selector Switch
- Porceluin Element Holders
- Automatic Hold and Cut-off instrument available
- Infinite Variety of Time-Temperature Curves Obtainable
- Rugged Construction. Highest quality insulation used.

COMPARE THESE PRICES

Firing chamber (H. W. D.)	Semi-Auto. prices	Auto. prices
6"x12"x12"	$295.	$432.
12"x12"x12"	$405.	$550.
9"x 9"x18"	$480.	$625.
14"x14"x14"	$525.	$680.
20"x20"x20"	$975.	$1140.
18"x18"x36"	$1125.	$1375.
(To 2000° Maximum Temp.)		

Over 40 Standard Models — Write for complete literature

L&L INDUSTRIAL DIVISION **MANUFACTURING CO.**
Chester 30, Pa.

Some Territories Available For Representation

If you write maker identify as **IEN - 8821**

MINIATURE Anchor Nuts

These new, light weight, self-locking anchor nuts have small envelope dimensions, are alike in design but No. 4605 is made with a dome to prevent wire chafing on screw threads in electrical assemblies.

Made in 4-40 and 6-32 thread sizes. Both types meet applicable requirements of Specifications AN-N-5 and AN-N-10.

Nutt-Shel
811 Airway, Dept.
Glendale 1, California
Citrus 4-4191—CH 5-3693

If you write maker identify as **IEN - 8822**

Lower tilt-back, lower carry

— loads without need for spinning wheels, travels faster

Bucket can tilt back to loosen tough materials or flip in small loads.

5" shorter turning radius (6'6"). Faster speeds to 13.88 mph in reverse, 7.66 forward.

Higher clearance (6'8"), more reach (2'7").

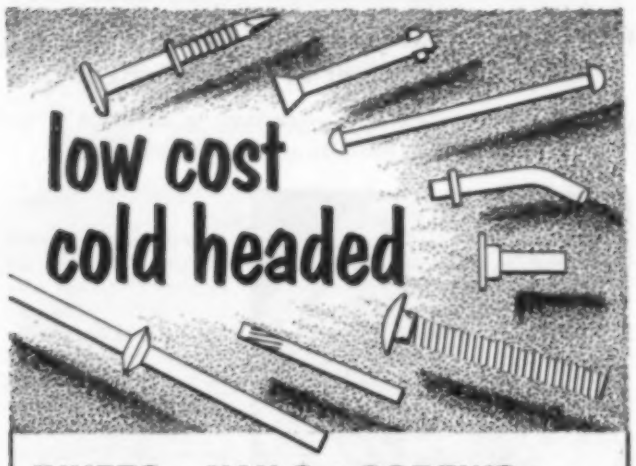
With the Auto-Scoop, operator can tilt the bucket back, independently of hoisting, at ground level. Can quickly loosen and load stubborn materials without undue crowding. Fast, low tilt-back also permits picking up small stockpiles, windrows. Carries low as 4½" from ground, improves stability, speeds travel. Many other advantages. Write for Catalog L12-4.

JAEGER LOAD-PLUS auto-scoop 12 cu. ft.

1 cu. yd. Load-Plus available for bigger work.

The Jaeger Machine Company
614 Dublin Ave., Columbus 16, Ohio

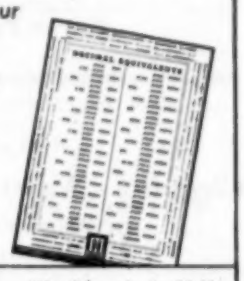
If you write maker identify as IEN - 8823



RIVETS • NAILS • SCREWS • FASTENERS • PARTS

. . . these are a Hassall specialty. Any metal, any finish, any size to ⅜" diameter and up to 7" long. *May we quote on your requirements?*

FREE DECIMAL WALL CHART
. . . this big, easy to read Decimal Equivalent Wall Chart is also a Hassall specialty. It's yours, free for the asking and no obligation.



JOHN HASSALL, INC., P. O. BOX 2169 Westbury, L. I., N. Y.

If you write maker identify as IEN - 8824

Eliminate costly hazards to men and equipment . . .

KIRK KEY INTERLOCK *System*

KIRK KEY INTERLOCK Systems provide a pre-determined sequence of operation to prevent "mental lapse" which might cause damage to men and equipment.

Shown above is a typical installation on electrical switchgear equipment. Cubicle door is interlocked (lock "B") with switch operating handle to prevent opening of door when switch (locked by "A") is closed and in service. Only when switch handle is locked open by "A" can the same key be used to release the lock "B" on the cubicle door. Operating handle can not be closed until cubicle has been locked closed and the key utilized to release lock "A".

Type B
Base Mounting

Type F
Flat Mounting

Type D
Detachable Latch

This is only one of the many Kirk Key Interlock arrangements available for use in electrical, mechanical and processing applications.

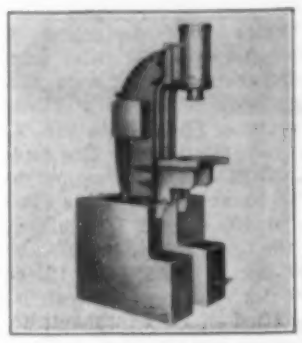
Write today for Bulletin No. 1725.

R&IE EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER CO.
KERR ST. GREENSBURG, PA.

If you write maker identify as IEN - 8826

Press - Self-contained hydraulic, rates 20 ton, has 12 in. stroke

Source: ROSS & COMPANY
1403 E. 57th St., Dept. IEN, Chicago 37, Ill.


Special base

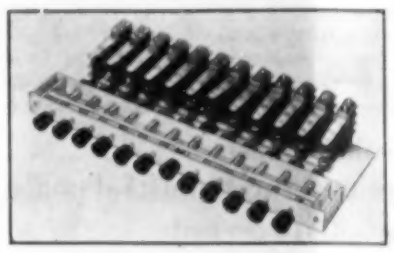
New base assembly for the company's hydraulic press, previously described IEN-6273-51, adapts the machine for straightening operations on cylindrical work such as metal spools and reels to 36 in. in diameter. The work rides the shelf and the adjustable table under the pressure operated ram.

The press occupies 28 by 34 in. of floor space and is operated by a 5-hp. motor on 220/440-volt 3-phase ac. The ram operates at 60 ipm. under full load with retracting speed at 90 ipm. Full stroke measures 12 inches. Maximum daylight is 16 inches.

If you write maker identify as IEN - 8827

Switch - Multi-circuit assembly mounts two to twelve push button units

Source: GENERAL CONTROL CO.
1200 Soldiers Field Rd., Dept. IEN, Boston 34, Mass.

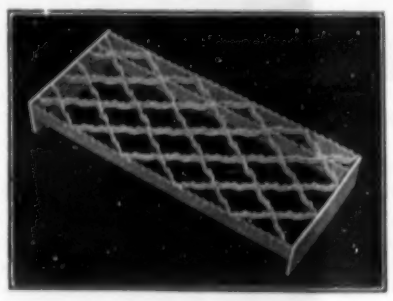

For centralized control

Various locking and non-locking arrangements, in assemblies from two to twelve circuits, are available with this new push button switch. It is known as Model MPB. Assembly is on extruded and punched channel sections. Rating is 20 amp. on 110-volt ac.

If you write maker identify as IEN - 8828

Floors - Safety stair tread made of company's Firm-Grip grating

Source: BUSTIN FIRM-GRIP GRATING CO.
Dept. IEN, Dover, N. J.


Trade named Coroweld

New tread for use in stairways leading to towers, gravity and storage tanks has been developed by the company to combine safety with light weight and economy. The openings measure 3⅝ by 2½ inches. Spacing of the contact points assures safe footing even though the tread is submerged in grease, oil, sleet or snow. Sizes are to order.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8829

NEW CATALOG

tells how to get the NEW LOOK in design This new 28-page catalog shows you how you can use Penmetal expanded metal to obtain, for your products, that smart, clean, attractive appearance that typifies modern trends in design.

Here, you will find mesh sizes, weights, gauges, and dimensions, as well as many illustrations showing how Penmetal expanded metal is used to add beauty, strength and utility in hundreds of applications.

Ask for a copy of catalog 502 EM. No cost or obligation.

PENN METAL COMPANY, INC.
General Sales Office: 205 East 42nd St., New York 17, N. Y.
Plant: Parkersburg, W. Va.

PM-44

If you write maker identify as IEN - 8830

Easy way to handle heavy storage bins

You'll save time and effort . . . work with greater ease . . . in moving heavily loaded bins in and out of storage.

Cradled in Roller Bearing Slides, bins roll out at a finger's touch—contents are immediately accessible. It's much faster and easier to remove or refill bins; to count or weigh contents. Stops prevent slide from being pulled out more than halfway, bins cannot fall out or spill contents.

Roller Bearing Stackracks® are individual units that lock together to form storage units of any size, shape or height. Completely flexible, they can be re-arranged quickly, without using tools. Get all the facts! Write for catalog.

STACKBIN CORPORATION
1077 Main Street
Pawtucket, R. I.
In Canada: Wickware-Stackbin, Ltd., Ottawa

STACKBIN® SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 8831

NOW!

HARDNESS-DIFFERENTIAL

built into seats of new UNION #603

No other Union has this differential!

In the new Rockwood Union #603, special heat treating of the male seat gives it a greater degree of hardness than the female seat. Result: *no galling in "making up" — longer service.*

Corrosion-resistant AIST molychrome steel seats are forged in place — double-locked under 100,000 and 400,000-pound pressure.

Other features: exclusive Rockwood cold forging process results in resistance to tough working conditions, permits absolutely interchangeable parts. Exclusive "Rockwoodizing" protects corrosion. For further details, write Rockwood Sprinkler Company, 428 Harlow Street, Worcester 5, Mass.

ROCKWOOD SPRINKLER COMPANY

If you write maker identify as IEN - 8832

Save $$$ when you machine Laminates

All grades of Synthane laminated plastic are comparatively easy to machine on standard shop equipment. By knowing the ins and outs, and by using specialized tools, an even better and faster job can be done. We have the equipment and the know-how.

The next time you need machined laminated parts, let us make them for you. You'll get precise work, without waste, produced by craftsmen skilled in plastics. The coupon will bring you complete information.

SYNTHANE
Manufacturers of Laminated Plastics

SYNTHANE CORPORATION
SOUTH RIVER ROAD, OAKS, PA.

Please send me information about machining Synthane and the Synthane fabricating service.

Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 8833

NEW! SCREW-IN TANK FLOAT SWITCH

Class 9037 Type HG

for CONDENSATE PUMP CONTROL

• Easily adjusted • Float indicator • Dial indicates water level change • 2½" fitting with tangent "hex" for easy installation • Switch action reversible in the field • Electrical ratings 110/220/440/550, 1 HP single or polyphase 115/230 Volts, D.C.; ¼ HP, 2 Pole.

Write for Bulletin 9037 HG. Address Square D Company, 4041 North Richards Street, Milwaukee 12, Wis.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 8834

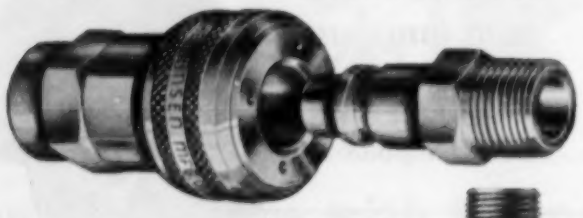
HANSEN

QUICK-CONNECTIVE

PUSH-TITE COUPLING

TRADE MARK

Provides Instant Automatic Flow or Shut-Off



To connect a Hansen Push-Tite Coupling, you merely push the Plug into the Socket with one hand. Flow is instantaneous.

To disconnect, push back sleeve on Socket . . . Coupling disconnects and flow is shut off instantly and automatically. No tools required. When Coupling is connected, Plug is free-swiveling, thus eliminating any possibility of kinks in hose.

Two-way shut-off and straight-through Couplings also available.

WRITE FOR CATALOG

THE HANSEN MANUFACTURING COMPANY

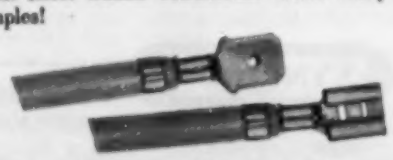
4911 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 8835

are Sweeping the Electrical Industry!

More and more manufacturers are getting into the swing to AMP FASTON connectors! Timers, clocks, switches, outlets, controls—all types of electrical components when equipped with AMP FASTON tabs not only *cost less* to produce, but offer all the advantages of easier, faster wiring on the line. To install, simply push FASTON on its mating tab. Wiring is accomplished in a fraction of the time required for screw-type terminal posts!

Triple spring action and wide wiping contact of AMP FASTON provides excellent electrical connection. U.L. approved, patented, AMP F CRIMP is voidless—gives high tensile strength and resists corrosion even under most humid conditions. Write today for information and samples!



Aircraft-Marine Products, Inc.

2100 Paxton Street, Harrisburg, Pennsylvania

If you write maker identify as IEN - 8836

Valve - Solenoid operated for line pressures to 3,000 pounds

Source: ATKOMATIC VALVE CO.
545 Abbott St., Dept. IEN, Indianapolis 25, Ind.

Bulletin 105

Series 4000 designates a new pilot operated valve with a 316 stainless steel body, 303 stainless trim and 416 stainless armature. Three sizes are ½, ¾ and 1½ inches. The first two will handle pressure to 2,500 lb. at 200 deg. F. or 1,200 lb. at 400 deg. F. The largest in the line rates to 3,000 lb. at 200 deg. F. and 1,500 lb. at 400 deg. F. Operation can be specified on 110 or 220-volt ac. or other non-standard voltage.

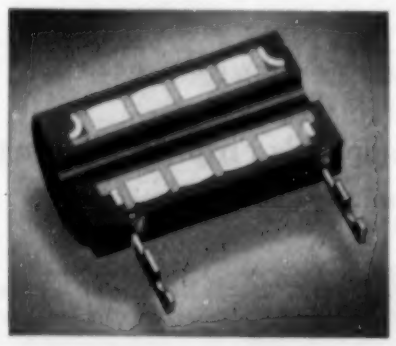
The solenoid coil is single or double construction, paper wound or glass insulated with silicone impregnation. The latter is recommended for service at temperatures exceeding 180 deg. F. The single wound coils will open the valve from its normally closed position at line pressures to 300 pounds. A double wound coil is employed for pressure above 300 pounds. In the latter case the primary winding is momentarily actuated to help lift the pilot assembly from its orifice. The holding coil then keeps it open.

The parabolic head on the screw that holds the valve disc in position eliminates hammer action when closing against liquids. Piston rings prevent sticking that might be caused by expansion under heat. The valve measures 3¾ in. between its faces in the two smaller sizes and 7 in. in the 1½-in. size. Overall height is about 8½ to 10½ inches.

If you write maker identify as IEN - 8837

Resistor - Encapsulated design excludes moisture, resists damage

Source: OHMITE MFG. COMPANY
3664 Howard St., Dept. IEN, Skokie, Ill.



Bulletin upon request

Enameled alloy resistance wire is pie-wound non-inductively on a rigid steatite bobbin and is welded to the terminals, employing the company's patented process, previously described IEN-6721-54, in manufacture of this new resistor in the Riteohm line. The assembly is encapsulated, including the bobbin center, in a special resin to keep out moisture and hold the windings in place.

The resistor is available with Type 85 axial leads or Type 86 lug terminals. Ratings are ¼ to 1 watt based on 125 deg. C. ambient temperature. Resistance can be specified to 1,950,000 ohms with tolerance to 0.1 per cent. Eight sizes, in Type 85, range from ⅜ to 1 in. in body length and from 1/16 to ½ in. in diameter. Type 86 is in three lengths from ½ to 1 in. and measures 9/16 in. in diameter. The resistor exceeds requirements of specification on MIL-R-93A, Amendment 2, at 125 deg. C. ambient.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8838

Stop CORROSION in your Steam System WITH CORAVOL

When fed to your steam system, **CORAVOL**: (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

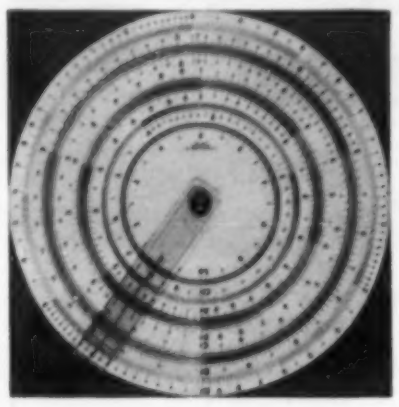
Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

If you write maker identify as IEN - 8839

Calculating - Circular slide rule is equivalent to 20 in. straight rule

Source: ALLEGHENY PLASTICS INC.
41 Thorn Run Road, Dept. IEN, Coraopolis, Pa.



$3 Post Paid

Laminated plastic is employed in the construction of this new 8-in. circular slide rule. Fine graduations are impressed in blue and black and are protected by clear over-lamination. The plastic is dimensionally stable Vinylite. Instructions are printed on the reverse side to apply the rule in functions of multiplication, division, proportions, square or square roots, cubes or cube roots, reciprocals and logarithms of numbers.

If you write maker identify as IEN - 8840

Cleaning - Waterless hand cream produces soothing effect on the skin

Source: MILBURN COMPANY
3246 E. Woodbridge St., Dept. IEN, Detroit 7, Mich.

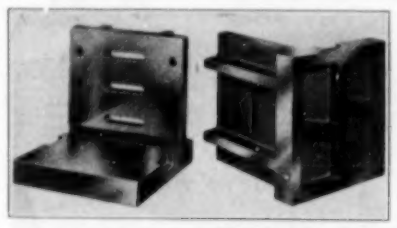
Free sample upon request

The company announces a new material, to clean a worker's hands, in its line of Ply-protective skin creams. The material is non-alkaline and borders on the acidic side. It contains no solvents, ammonia or caustics. It is non-flammable and harmless to gloves made of rubber or fabric.

If you write maker identify as IEN - 8841

Layout - Angle plates to position and check work accurately

Source: TAFT-PEIRCE MFG. CO.
32 Mechanic Ave., Dept. IEN, Woonsocket, R. I.



Special sizes to order

Multiplex is a new angle plate measuring 12 by 12 by 12 in. in standard overall dimensions. The plain surface measures 12 by 12 in. and the working surface, at right angles, measures 10 by 12 inches. Holes and slots are provided for clamping bolts. Two recessed lips in the base section offer shoulders with which the plate can be clamped on a machine or on an inspection table.

The base and angle faces are ribbed for rigidity. Working surfaces are square within 0.0005 in. in 6 inches. Parallelism of the respective sides is within 0.0005 inch. The plate is made of normalized cast iron with scraped surface finish. Weight is about 95 pounds. List price is $240.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8842

BJ

reliable mechanical seals

Your stuffingbox troubles go out when a BJ Mechanical Seal goes in. Sizes to fit any pump.

Contact your nearby BJ Pump sales office or write:

Byron Jackson Co. *Since 1872*

P.O. Box 2017, Terminal Annex Los Angeles 54, California

If you write maker identify as IEN - 8843

Magnet - Permanent unit to pick up ferrous items from floor

Source: MAGNETIC ENGINEERING & MFG. CO.
850 Van Houten Ave., Dept. IEN, Clifton, N. J.

Alnico V magnets

Sweep width ranges from 24 to 72 in. in five available sizes of this new permanent magnet Ferrosweeper. The magnet housing is mounted on semi-pneumatic tires and is equipped with a handle to push or pull the unit above a floor surface or roadway that is to be cleared of ferrous items such as nails, scrap iron, chips. The wheels are 10 in. in diameter and are mounted on ball bearings.

The bottom face of the housing is covered by a strip of canvas held in place magnetically. This strip can be removed to release the tramp iron that has been picked up. Then it is replaced ready to resume further cleaning action.

Three capacities rate 47 to 79 lb. for the 24-in. unit and 187 to 263 lb. for the 72-in. sweep size. Corresponding overall width is 35½ to 83½ inches. Height adjustment above the floor is from 1 to 2 inches.

If you write maker identify as IEN - 8844

Marking - Traffic line machine feeds paint to brush by gravity

Source: H. C. SWEET COMPANY
24396 W. 7-Mile Road, Dept. IEN, Detroit 19, Mich.

Handle controlled

Rubber tires, semi-pneumatic design, are now available when specified on the standard model Florline marking machine, previously described IEN-5558-53. List price for the new unit is $99.50. This compares with list price of $97.50 for the standard assembly with 6-in. aluminum wheels. Both machines are equipped with a third retractable wheel that acts as a line guide 18 in. ahead of the main wheels. It retracts on approach to a curve or wall surface.

Paint held in the cylindrical barrel flows by gravity to a spreader brush located between a pair of side guides. Flow can be adjusted to accommodate the operator and the job. The machine holds 1½ gal. of paint, lacquer or white wash, sufficient for about 1,200 ft. of 4-in. line.

If you write maker identify as IEN - 8845

You can purchase a power chuck wrench as a work saving attachment if you are the owner of one or more of the new heavy duty turret lathes being made by Warner & Swasey Co., 5701 Carnegie Ave., Dept. IEN, Cleveland 3, N. Y. The wrench mounts on the headstock back of the chuck. It is driven by a motor with a controlled torque clutch. Controls extend to the operator's position at the front. All operator effort to chuck and release the work is eliminated.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8846

Discover Why Pemco Wheels and Casters KEEP Rolling!

Write today . . . you'll receive by return mail our New Catalog

. . . In it you'll see why so many users of wheels and casters are choosing Pemco. Large or small, your requirements too can be handled with greater success by Pemco.

Advantages for You

For example, Pemco Wheels are distinguished by a unique solid metal hub which gives far greater rigidity, ability to absorb shock loads, and ease of operation with minimum wear. Pemco Casters feature two rows of load carrying balls for closer alignment, easier operation.

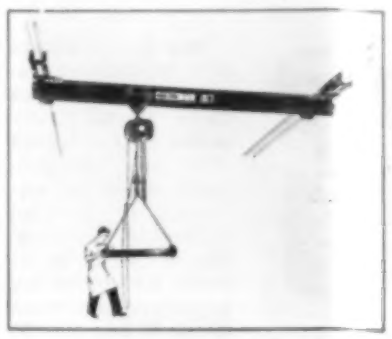
Let us put complete facts and specs in your hands — request our catalog today.

PEMCO WHEEL CO.
1881 Ravine Road
Kalamazoo, Mich.

If you write maker identify as IEN - 8847

Crane - Traveling push type, underslung and top running assemblies

Source: INDUSTRIAL CRANE & HOIST CORP.
315 N. Ada St., Dept. IEN, Chicago 7, Ill.



Bulletin PT-1253

Rolled I-beam, made of manganese steel, serves as the load carrying girder in the company's new line of hand operated push type cranes. The line includes a light duty series with capacities from 500 to 4,000 lb. on spans from 8 to 20 ft. for use with chain hoists and a heavy duty underhung design with capacity from 1,000 to 8,000 lb. on spans from 10 to 28 feet. Also included is a top running design in ratings from 1,000 to 8,000 lb. on spans from 10 to 30 feet.

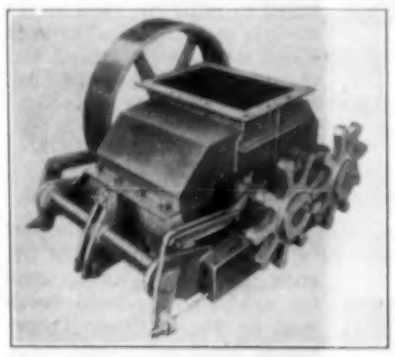
The light duty crane is recommended for intermittent service and for installation not higher than 10 ft. above the floor line. The heavy duty underhung design is featured by forged steel wheels, bored and machined to take the wheel bearings and snap ring bearing retainers. Patented removable head axles are supplied on each wheel to permit removal of the wheel without need to dismantle the end truck or to remove the crane from the runway.

The heavy duty top running design employs end trucks that are jig bored for exact alignment of the wheels and axles. Double flanged machined semi-steel wheels are keyed to the axles which turn on permanently lubricated grease packed sealed precision ball bearings. Rated capacity of this line employs a safety factor of 5 to meet AISC specifications.

If you write maker identify as IEN - 8848

Crushing - Double roll machine applies on lump coal, cinders, lime

Source: McLANAHAN & STONE CORP.
Dept. IEN, Hollidaysburg, Pa.



Assembles on fork plate

Steel gears with special flame cut teeth connect the two rolls in this new Black Diamond crushing machine. They permit roll adjustment for opening to 3½ inches. Roll diameters are in four sizes between 18 and 36 inches. Roll length is 18 to 60 inches.

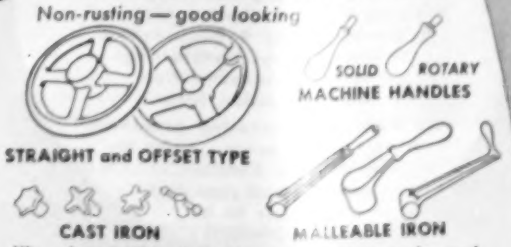
Construction is featured by a movable roll that is backed by a linkage employing a curved cast iron adjusting block to serve as a combination of tramp iron protector and adjusting device. The block breaks upon entry of tramp iron to release the crushing action. The base frame and hopper are made of steel. Steel liner plates minimize wear. Roll shaft bearings are split at 45 deg. on their center lines and are fitted with two piece bronze bushings with shims.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8849

Dependable
MEASURING & CHECKING EQUIPMENT

and Now
HAND WHEELS, KNOBS, HANDLES
Cadmium Plated READY TO DELIVER
Non-rusting — good looking



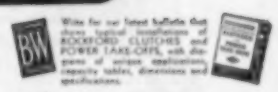
Send for Complete Catalog

We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. F Detroit 12, Mich.

If you write maker identify as IEN - 8850

DESIGN



ROCKFORD CLUTCHES are thoroughly tested to make sure they will stand up under full torque, shock-load, engagement frequency and duration, slippage and reversals, to help insure more work-time, with less down-time from machines in which they are used. Because of this exacting to-the-job-application, down-time for clutch adjustments or repairs has been reduced to a minimum. Let ROCKFORD engineers help get more work-time for your machines.

ROCKFORD CLUTCH DIVISION
BORG-WARNER
303 Catherine Street, Rockford, Illinois

ROCKFORD CLUTCHES

If you write maker identify as IEN - 8851

MODERNIZE YOUR WARNING SIGNAL SYSTEM

with this NEW extra-compact powerful BENJAMIN SIREN!

TYPICAL APPLICATIONS OF THE BENJAMIN SIREN

for civil defense

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for plant protection

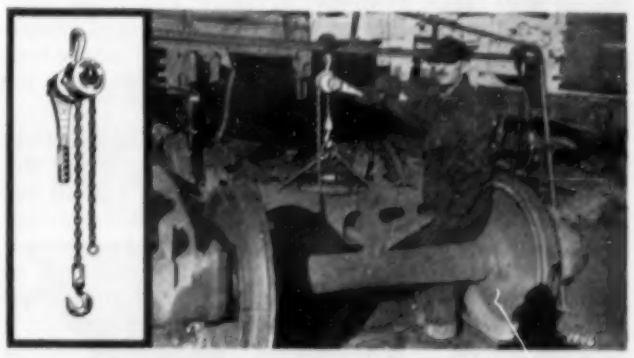
This new siren is especially designed for modern multiple-signal installations, which overcome problems of atmospheric conditions, wind direction and industrial din. A small-yet-powerful high-torque, 10,000 r.p.m. motor and precision-machined housing makes possible extra-compact design. Famous Benjamin built-like-a-battleship construction prevents moisture from entering and assures long, trouble-free operation.

It's the 20th Century Pony Express!

FREE SIGNAL BOOK! Send for your copy of this most complete book on signaling! Benjamin Electric Mfg. Co., Dept. O, Des Plaines, Ill.

609

If you write maker identify as IEN - 8852



HANDY TOOL FOR SAVING MONEY

'Tugit' acts fast to handle loads other tools can't budge. It's a lever-type lifting and pulling hoist with spur-geared efficiency. It's easy to use at any angle in close quarters or where work space is no problem. A 40-lb pull on the handle lifts a ton. Loads can be spotted as close as 3/32" at a time.

Versatile 'Tugit' is busy on thousands of different jobs every day. Wherever it is used, time and effort are saved and — complete safety is assured.

Let 'Tugit' cut the cost of tough load-lifting and load-pulling tasks for you. It's light, easy to carry. It's compact — fits any tool box. Capacities: 1 and 2 tons. Get full information from your "Shaw-Box" Distributor or write us for Bulletin 388.

'TUGIT'® HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' and 'American-Microsen' Industrial Instruments, and Aircraft Products.

If you write maker identify as IEN - 8853

CAPCO Dock Covers completely enclose the space between car and building doorways protecting loading and unloading during bad weather... preventing accidents... insuring against loss of heat or refrigeration. 51 different models in any size for every loading problem.

CAPCO

Write for literature and name of nearest distributor.

• 622-24 PROSPECT AVENUE • KANSAS CITY 24, MISSOURI

If you write maker identify as IEN - 8854

B.F.Goodrich

FREE TIRE AND WHEEL TW ANALYSIS eliminates tire waste, cuts costs 20 to 50%

The B. F. Goodrich Tire and Wheel Analysis Plan attacks excessive tire costs by uncovering the *reasons* behind tire waste. What causes premature tire failure? Rapid tread wear? Cutting and chipping? The TW Analysis answers all of these questions and many more. This free analysis has cut tire costs 20 to 50% for hundreds of industrial tire users across the country. It can do the same for you!

Contact your BFG retailer or mail the coupon below. Without cost or obligation, a trained B. F. Goodrich man will study your materials handling operations. He will tell you what type and size tire, what tread design and compound will serve you best. He will recommend ways to improve your tire maintenance program. The advice you receive will be unbiased, for B. F. Goodrich makes a *complete* line of industrial tires—solids, pneumatics and semi-pneumatics.

Tire failures like this cost money! This tire failed prematurely. BFG's TW Analysis helps you discover the reasons for tire failure, prevents reoccurrences, saves you tire dollars.

The B. F. Goodrich Company
Tire & Equipment Division
Department TW-405, Akron 18, Ohio

Please send me:

- ☐ Additional information on your Tire and Wheel Analysis Plan
- ☐ Free copy of "Industrial Tire Guidebook"
- ☐ Free copy of "How to Get Extra Service out of Solid Industrial Tires"

Name_____
Company_____
Street_____
City_____ Zone____ State____

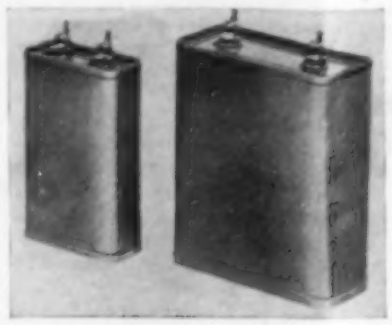
Specify B. F. Goodrich tires when ordering new equipment

B.F.Goodrich — Research keeps first in rubber

If you write maker identify as IEN - 8856

Capacitor - Hermetically sealed, has rating from 600 to 6,000 volts dc.

Source: INDUSTRIAL CONDENSER CORP.
3243 N. California Ave., Dept. IEN, Chicago 18, Ill.



Excludes moisture

New line of square and rectangular capacitors includes units hermetically sealed in lead coated steel cases with porcelain stand-off terminals or riveted solder lug terminals. The units can be oil filled for operating temperatures between minus 40 and plus 70 deg. C. They can be filled and impregnated with Pyroteen for temperatures between minus 70 and plus 90 deg. C. Wax impregnation also can be specified. Standard capacity tolerance is plus or minus 10 per cent.

If you write maker identify as IEN - 8857

Steel - Flats, rounds, shapes and sheets in rack for utility use

Source: AMERICAN INDUSTRIAL PRODUCTS CO.
1448 E. 49th St., Dept. IEN, Cleveland 3, Ohio

Ask for bulletin

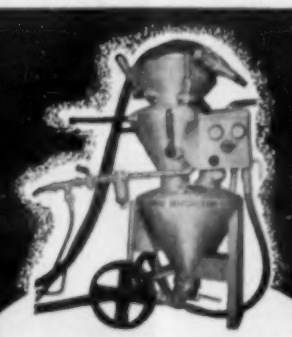
Handi-Steel Mill designates a new rack assembly containing 94 pieces of steel, each protected with a rust resistant finish. The assortment includes 15 flats in three sizes, 12 squares in four sizes, 31 rounds in seven sizes, 12 thread rods in four sizes, 12 angles in four lengths and 12 galvanized sheets. The company is prepared to refill the rack as the stock is used from it. The rack itself is made of steel and presents a decimal equivalent chart and miscellaneous information on its front surface.

If you write maker identify as IEN - 8858

New method and associated equipment to prepare a test sample of a material such as a complex organic solid, lipstick, deodorant, amino acid for analysis, has been developed by Perkin-Elmer Corporation, Main Ave., Dept. IEN, Norwalk, Conn. You take a small sample of the material, mix it with pure potassium bromide and squeeze the mixture in a special die while vacuum is applied. Out of the die comes a clear disc that can be applied in a spectrometer to identify the solids and give their composition. It is also for quantitative analysis.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8859



Do Your Own Concrete Gunning and SAVE MONEY!

BONDACTOR Equipment
Does All These Jobs Better . . . Faster!

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- Wet and dry sandblasting
- Many more restoration and fabrication jobs

We train your operating personnel at no extra expense. Write today for full details . . . state intended uses and materials to be gunned.

AIR PLACEMENT EQUIPMENT COMPANY
1006 W. 24th St., Kansas City 8, Mo.

If you write maker identify as IEN - 8860

$uper-$avers

SPROUT-WALDRON

BELT-SAVER PULLEYS

You'll cut belt costs when handling rough, abrasive materials with Belt-Savers. Exclusive cone and wing design prevents materials from lodging between pulley and belt, increasing belt life from 50% to 400%.

You'll also get top economy and complete satisfaction with other Sprout-Waldron cast-iron pulleys that are available in many sizes and types for conveyor and transmission use.

Write for free booklets!

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5 LOGAN STREET • MUNCY, PA.
PELLET MILLS · HAMMER ROLLER ATTRITION AND BURR STONE MILLS · MIXERS · SCREW BELT AND PNEUMATIC CONVEYORS · BUCKET ELEVATORS · CUTTERS · CRUSHERS AND FEEDERS · REELS · SEPARATORS AND ASPIRATORS

If you write maker identify as IEN - 8861

TURQUOISE *Smoothness is Sealed In*

AND THE *SEAL* IS AS VITAL AS THE LUBRICANT. Just as the smoothness of your car would vanish if oil drained from gears and bearings, so does the smoothness of the ordinary drawing pencil disappear with the seepage of its lubricating waxes from lead to wood. In TURQUOISE, this seepage is prevented by an impervious coating deposited on the lead by a patented process. The waxes stay *in the lead,* and TURQUOISE stays *permanently smooth.*

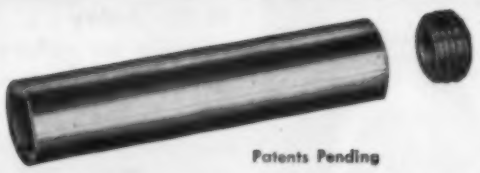
FOR FREE SAMPLE write us, naming this magazine, your dealer and the grade desired, 6B to 9H.

EAGLE "CHEMI-SEALED" TURQUOISE DRAWING PENCILS
Leads and lead holders, too

EAGLE PENCIL COMPANY • 703 EAST 13th STREET • NEW YORK
EAGLE PENCIL COMPANY OF CANADA, LTD., TORONTO

If you write maker identify as IEN - 8862

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!



Patents Pending

One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the sleeve. The sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.

The sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

SLEEVES MADE IN FOLLOWING SIZES:
3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4", 1"

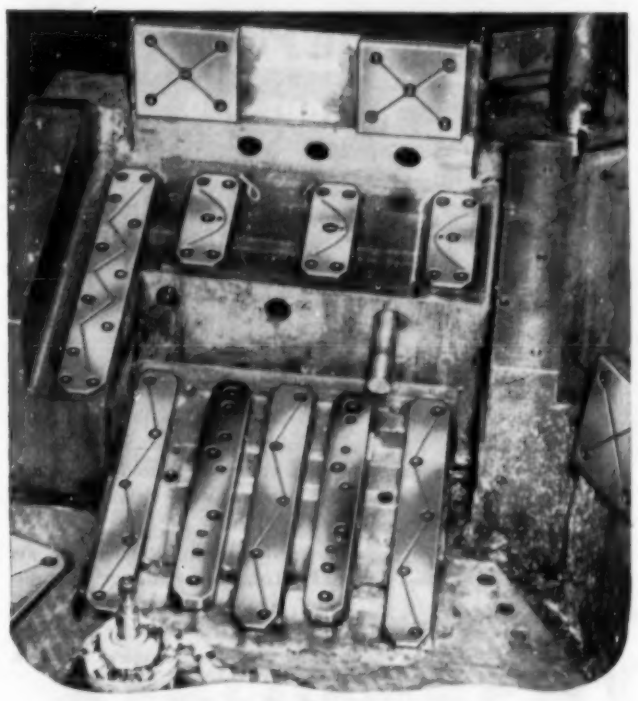
Write for Literature

STURDY BROACHING SERVICE
23516 TELEGRAPH ROAD • DETROIT 19, MICH.

If you write maker identify as IEN - 8863

CAMLOC FASTENER CORPORATION
24 Spring Valley Road, Paramus, N. J.
WEST COAST OFFICE: 5410 WILSHIRE BLVD., LOS ANGELES, CAL.

If you write maker identify as IEN - 8864



THEY'RE OK HERE

. . . long wearing, economical OK aluminum bronze wear plates

Practically every important automobile manufacturer now uses OK aluminum bronze wear plates on body dies.

By a unique cladding process, long-wearing aluminum bronze is bonded to a machinable steel base. Cost is drastically lower when compared to solid cast bronze plates. A finer quality bearing surface is obtained, resulting in longer life. When fitting is required to suit die, steel backing of plate is easily machinable, and no difficulty is encountered drilling or counter boring through bronze surface. OK aluminum bronze plates are applicable wherever a die has a sliding or cam action. A large selection of sizes of OK aluminum bronze plates is carried in stock . . . finished ground, flat and parallel . . . ready to ship. Simply send your drawings or sketches to our engineering department.

For complete information write Dept. 12—J

Manufacturers for the metal working industry of:
SLITTER KNIVES • SHEAR BLADES • BRONZE WAYS
ROTARY SHEAR KNIVES • HARDENED SPACERS
BALL RACES • HARDENED WAYS • WEAR STRIPS • GIBS

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

If you write maker identify as IEN - 8866

Drive - Flexible shaft coupling with friction member to limit torque

Source: MORSE CHAIN CO.
7601 Central Ave., Dept. IEN, Detroit 10, Mich.

Resets itself

A friction disc, with three integral lugs equally spaced around its circumference, is clamped between two steel driving plates in this new Torque Limiter flexible shaft coupling. The plates are mounted on splines on the driving hub, to the left in the illustration. Clamping action is by a Bellville spring backed up by an adjusting nut that threads on the hub. The hub itself is keyed to the driving shaft.

A hub equipped cup, made of steel, carries three slots that engage the lugs on the friction disc. The integral hub mounts on the driven shaft. Free action between the shoulders of the cup and the friction disc lugs permit limited misalignment between the two shafts.

Application is on a motor for direct connection to a machine or from the output shaft of a speed reducer to a machine. The friction disc slips between the driving plates and continues to slip at ⅓ to ½ the torque setting, in the event of overload, so the driving action is released. Then the drive can be shut down, the overload condition corrected and the drive resumed.

The assembly is available in a nominal 5½-in. size with maximum torque capacity at 130 ft. lb. in one model and 260 ft. lb. for the other. Outside diameter is 6 inches. Overall length is about 5½ inches. Standard bore is in five steps between 1 and ½ inches. Minimum plain bore is ¾ in. to provide a unit that can be machined on the job to fit special shafts.

If you write maker identify as IEN - 8867

Truck - Straddle carrier has 10 ton load capacity, engine drive

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek 49, Mich.

A load of pipe

Series 81 designates new design to replace the previous Series 80 in the company's line of straddle carriers. A large opening in the truck frame and a window below the wind shield, on the operator's cab, provide good visibility for engaging, lifting and depositing a load. The cab is sufficiently large for comfortable operation. New position of the transmission and engine permits a view over the right hand side of the machine.

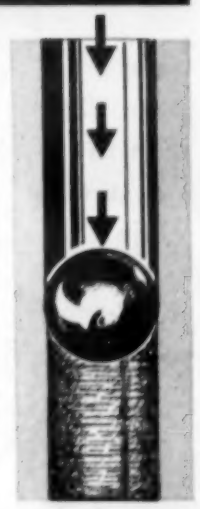
Working parts in the super-structure, including the engine and hydraulic equipment, are accessible through the removable covers. Support springs, in the corner posts, are protected against weather and wind blown dust. The hydraulically operated load hook now has a speed of about 35 fpm. compared to a previous 18. Over center emergency brakes with an independent control lever for each rear wheel are standard equipment. The truck can be supplied with a Hercules or Ford engine. Hydraulic steering and a steel cab can be specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8868

BALLIZING

For NEW Speed and Economy in Hole Sizing and Finishing



BALLIZING is a precision high-production process for sizing and finishing die-cast, drawn, and machined holes — simply by pressing a ball through the unfinished hole. With alloy steel and tungsten carbide balls available in practical quantities and in any size required, this process is used with holes of all diameters.

MAJOR ADVANTAGES:

FAST; takes only seconds. ACCURATE. FINE FINISH — burnished smooth. ECONOMICAL. Uses unskilled labor. No tool sharpening. No close adjustments. No special equipment.

FREE BALLIZING BULLETIN gives details; shows typical applications. May we send you a copy?

INDUSTRIAL TECTONICS, Inc. ANN ARBOR 2, MICH.

ITI PRECISION BALLS
All Materials — All Sizes
In Large or Small Quantities

If you write maker identify as IEN - 8869

Have You Considered Air for the Following Uses?

AIR CURTAINS . . . LIQUID REMOVING
HEAT TREATING . . . SCALE BLOWING
COOLING . . . SPRAYING . . . AGITATION
TESTING . . . DRYING . . . VENTILATING
HEAT TREATING

These and other applications are described in the Spencer Turbo-Compressor Data Book No. 107-C. Yours for the asking.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
466-J

If you write maker identify as IEN - 8870

SMOOTH, ACCURATE SHEARING

Micro-set knife clearance adjustment, a standard feature on all Steelweld Shears, enables obtaining clean, sharp cuts to close tolerances for all thicknesses of metal within the machine capacity. It is one of many new and revolutionary features that make Steelweld Shears so popular. Steelwelds are available for cutting all sizes of plate to 24'-0" and one-inch thick.

STEELWELD Pivoted-Blade SHEARS CATALOG No. 2011

Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
4242 E. 282nd St., Wickliffe, O.

STEELWELD SHEARS

If you write maker identify as IEN - 8871

These Bond Casters are Your Best Buys for TROUBLE-FREE SERVICE

36-A Series—Double Ball Race Swivel Caster
1-A Series—Stationary Caster
41-A Series—Structural Steel Stationary Caster
40-AH-VG Series—V-Grooved Wheel Structural Steel Heavy Duty Swivel Caster
3-A Series—Single Ball Race Swivel Caster
Dual Wheel Swivel Caster

Ask your industrial distributor . . .

he knows that for dependability, economy and trouble-free materials handling you just can't beat Bond Casters. Your distributor has the right Bond Casters for your jobs. Get your copy of Bond Catalog K-38 from him, or write direct.

BOND FOUNDRY & MACHINE CO.
Manheim, Pennsylvania

If you write maker identify as IEN - 8872

YOU CAN SEE THE DUST BUT NOT THE MONEY

The dust is visible, but the dollars and cents loss of inefficient collection methods is hard to see. If saleable or reusable process dust is going up your chimney you can turn this loss into profit with an efficient dust collection system geared to the needs of your particular process.

Our new manual, "A Simplified Test Method for Dust Control Determination" describes the easiest method of determining your dust problem and equipment needs for effective control and recovery.

For your copy, just clip this ad to your company letterhead and sign your name and title.

dustex CORP.
1764 Walden Avenue
Buffalo 25, N. Y.

If you write maker identify as IEN - 8873

Facts! Facts about the strong, dense all wood hardboard that's now improving quality and reducing production costs in industry after industry. Send for your free copy of "A Guide for Product Designers."

PRESDWOOD WOOD MADE BETTER

NATURALLY STRONGER WITH LIGNIN
MASONITE® CORPORATION
Dept. IEN-8, Box 777, Chicago 90, Ill.

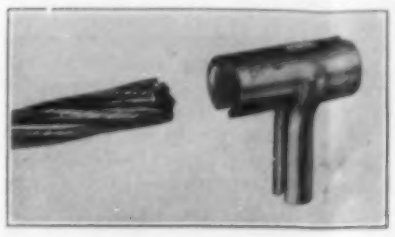
"Masonite" signifies that Masonite Corporation is the source of the product.

If you write maker identify as IEN - 8874

If you write maker identify as IEN - 8875

Connector - Copper adapter attaches aluminum cable to a terminal

Source: THOMAS & BETTS COMPANY
60 Butler St., Dept. IEN, Elizabeth, N. J.



Drives on cable

An aluminum or a copper electric conductor can be attached to the terminals in switch and control equipment by means of this new tin plated copper adapter. It is available in right angle design as shown in the illustration and also in a straight design in which the clamping tongue is in line with the main body. This tongue applies in the equipment clamp after the adapter has been tapped into place over the conductor. When the equipment clamp is tightened the barrel of the adapter grips the cable. Longitudinal serrations in the barrel bite through the oxide, usually covering the aluminum strands, so this oxide is broken and a good electrical connection is assured. The adapter is available for No. 2 and No. 4 stranded aluminum cable.

If you write maker identify as IEN - 8876

Separating - Air line filter delivers clean, dry air to instruments

Source: FOXBORO COMPANY
42 Neponset Ave., Dept. IEN, Foxboro, Mass.

Bulletin TI 29-A-92a

Compressed air for instrument operation is connected into one side of the top cap on this new filter. The entering air strikes a baffle plate on the cap and enters the main chamber to surround the moisture resistant resin impregnated cellulose filter sleeve. It passes through this sleeve and returns upward for exit at the side opposite that at which it entered. Dirt collects on the outside surface of the sleeve.

Oil and water move down to the 12 cu. in. sump at the bottom of the housing. Filter capacity is 4 cfm. of air or natural gas at working pressure to 150 pounds. Filter area is 21.2 square inches. The supply and outlet connections are threaded for ¼-in. pipe. Overall dimensions are about 4 by 8½ inches.

If you write maker identify as IEN - 8877

If dust is bothering you, while you are sitting in the operator's seat of a tractor, we suggest that you try a new Filtercool respirator. This unit employs a filter to remove dust from the air you breathe. It also connects to exhaust out of the respirator hood and into the air intake stack on the tractor so fresh air is being drawn through continuously. A round perforated sponge in front of the filter element acts as a humidifier and cooler for air entering the mask. The amount of engine vacuum moving through the mask hose can be regulated by turning a little valve. General Scientific Equipment Co., 2700 W. Huntington St., Dept. IEN, Philadelphia 32, Pa., can supply you.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

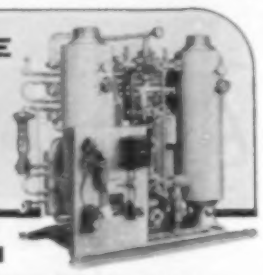
If you write maker identify as IEN - 8878

If you write maker identify as IEN - 8879

If you write maker identify as IEN - 8880

If you write maker identify as IEN - 8881

If you write maker identify as IEN - 8882



A LITTLE MOISTURE CAN BE A BIG PROBLEM

Get rid of it with a Pritchard HYDRYER!

It's simple to eliminate moisture problems that affect the accuracy or efficiency of your instrument installations or process controls. A Pritchard HYDRYER* is *the* efficient dehydration unit that you can depend on to do that job.

A standard packaged HYDRYER—completely factory assembled—provides long, trouble-free service for most drying jobs. For extreme conditions or special requirements, a custom unit can be readily adapted to your needs.

For complete information, write for Pritchard's new HYDRYER bulletin 16.0.081.

*Registered Trade Name

Industry's Partner for Progress

COOLING TOWERS
SPECIALIZED HEAT EXCHANGERS
GAS & AIR TREATING EQUIPMENT

J.F. Pritchard Co.
OF CALIFORNIA
A DIVISION OF J. F. PRITCHARD & CO.
Dept. 373, 210 West 10th Street
Kansas City 5, Mo.

Representatives in Principal Cities From Coast to Coast

If you write maker identify as IEN - 8883

NOW! HALFTONES

as well as LINE WORK can be copied by

XEROGRAPHY

ONTO PAPER MASTERS FOR DUPLICATING

IN 3 MINUTES!

Use of the new XeroX Tone Tray in copying line and halftone subjects onto paper masters by xerography offers a quick way of providing a few, or many, copies of catalog sheets, price lists, bulletins, magazine articles, at costs considerably less than by conventional methods.

Photo shows paper master of line and halftone subjects prepared by xerography in XeroX® Lith-Master* copying equipment with the new XeroX Tone Tray. Photo also shows original (on XeroX Lith-Master Camera) and one of multiple copies run off from paper master on an offset duplicator.

Xerography is used by companies of all kinds, large and small, in thousands of applications copying forms, letters, charts, bulletins, sales manuals, engineering drawings, etc., for duplicating. Anything written, typed, printed or drawn can be copied onto paper masters by xerography with XeroX Lith-Master copying equipment.

For use in diazo type machines, translucent intermediates can be made from any original subject in the same speedy way.

Write for complete information on what xerography can do to cut your duplicating costs.

*A TRADEMARK OF THE HALOID COMPANY

THE HALOID COMPANY
54-54X HALOID STREET • ROCHESTER 3, NEW YORK
BRANCH OFFICES IN PRINCIPAL U.S. CITIES AND TORONTO

XEROGRAPHY
THE FASTEST, CHEAPEST, MOST VERSATILE WAY TO MAKE MASTERS FOR DUPLICATING.
XEROX

If you write maker identify as IEN - 8885

Construction - Concrete mixer and agitator, 4½ and 5½ cu. yd.

Source: BLAW-KNOX COMPANY
2050 Farmers Bank, Dept. IEN, Pittsburgh 22, Pa.

Bulletin 2455

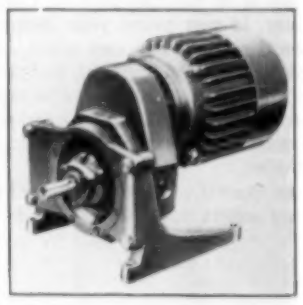
Hi-Boy Model M is a new engine driven concrete mixer-agitator designed to mount on a short wheel base truck. The equipment is available in 4½ and 5½ cu. yd. capacities with either an open or a closed end drum and with water handling equipment to meet the user's requirements. Design that employs a closed end drum has a revolving hopper which can be rotated from charge to discharge position or back in 3 seconds. It is held in either position by a latch. A 36-in. opening in the hopper permits fast loading. The open end drum, with its stationary charging hopper, can be loaded at the rate of 8 to 9 sec. per yard. A large diameter charging cone in the drum opening prevents spilling during the charging operation.

The distributing spout, a two piece design, is made of Manten steel, the same as the material employed in the mixer shell and blades. It measures 10 ft. in overall length. It is bowl shaped at the upper end and is pivot mounted. The lower end is supported by an adjustable strut. The spout can be swung to one side in a 90-deg. arc to assist in discharging into large concrete buckets or hoppers.

If you write maker identify as IEN - 8886

Motor - Geared head design, ⅓ to 15 hp., range of output speeds

Source: BELGIAN ELECTRIC SALES CORP.
40 E. 49th St., Dept. IEN, New York 17, N. Y.



Catalog CC-14A

Induction motor, totally enclosed fan cooled design, for operation on 3-phase 60-cycle ac. and 220, 440 or 550 volts at 1,200 rpm., is combined with a planetary type speed reducing head in this new ACEC-SADI line of geared head motors. The motor itself is normal torque with Class A insulation and a ball bearing NEMA frame. Motor ratings are ⅓ to 15 hp. The ⅓-hp. unit is available over a speed range of 0.31 to 776 rpm. The 15-hp. motor can be supplied for a minimum speed of 11 rpm.

Three types of mounting include flange, plate and foot. Three arrangements of drive include horizontal and vertical with the shaft up in one case and down in the other. Splash lubrication is employed for the gearing in the horizontal mounting by partial emersion of the gears in the oil chamber. A plunger pump picks up oil from a chamber located below the gears, in the vertical mounting, and delivers it to the top planetary gear from where it returns by gravity to the reservoir, oiling the gearing and bearings on the way down. The company handles sale and service in the United States and Canada for the new motor which is made in Europe.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8887

Then you need to know about NEW Irvington Insulating Varnish No. 180

This new varnish was specifically formulated to provide outstanding electrical and physical properties at temperatures up to 356° F.

Irvington Varnish No. 180 has a dielectric strength of 2,100 vpm (dry), good resistance to moisture and acids; excellent oil resistance, adhesion, toughness and storage stability. Can be used on practically any type of electrical equipment (with the possible exception of totally enclosed). Write for Technical Data Sheet.

LOOK TO IRVINGTON FOR INSULATION LEADERSHIP

IRVINGTON VARNISH & INSULATOR
DIV. OF MINNESOTA MINING & MFG. CO.
31 ARGYLE TERRACE, IRVINGTON 11, N. J.
Plants: Irvington, N. J.; Monrovia, Calif.; Hamilton, Ontario, Canada

If you write maker identify as IEN - 8888

In 1 minute

The Verifax method, Kodak's sensational new office aid, gives you—

3 copies

of any letter or other office record—legible, dry, photo-exact—and made . . .

on ordinary paper

instead of on specially treated paper. These 3 copies are produced from but *one* sheet of Verifax Matrix Paper for

only 4¢ apiece

which is real copying economy!

Only equipment needed is the compact Verifax Printer . . . priced at low $240. Amazingly simple to operate . . . can be used under present lighting.

Save now! Write for free Verifax booklet and names of near-by dealers.

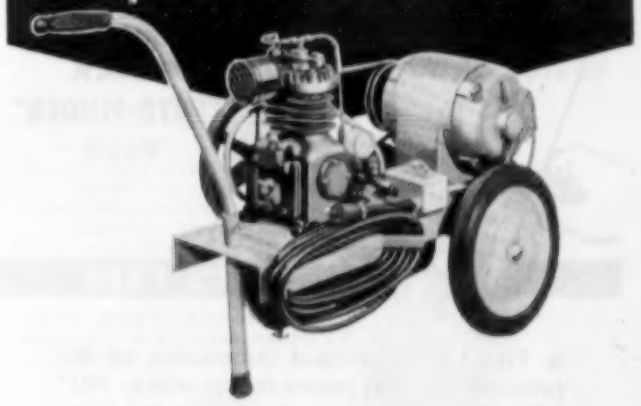
EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Price quoted is subject to change without notice.

Kodak

If you write maker identify as IEN - 8889

Have Compressed Air Anywhere You Need It



New DeVilbiss Portable Air Compressors bring air to the job for spray painting, air tools, emergency service, or on-the-spot air supply. Available in ½ or 1 hp class, gas and electric models. Delivered pressure 60 or 100 pounds. Can even be carried in the trunk of your car. Write today for full details.

DEVILBISS
THE DEVILBISS COMPANY
Toledo, Ohio
Santa Clara, Calif. • Barrie, Ontario • London, England

If you write maker identify as IEN - 8890

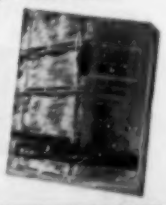
LET US SHOW YOU HOW TO

CUT WAREHOUSING COSTS . . . as much as 75%

Paltier STORAGE SYSTEM

PALTIER records are filled with proof after proof of storage cost cuts in the handling of every conceivable type of product. We can cut your storage costs, too!

ASK US:
- PALTIER studies your storage problem—engineers and designs a system for your specific needs.
- Many PALTIER installations pay for themselves "right from the start."
- This booklet tells the PALTIER story, ask for it today.



THE PALTIER CORPORATION
1711 KENTUCKY ST.
MICHIGAN CITY, IND.

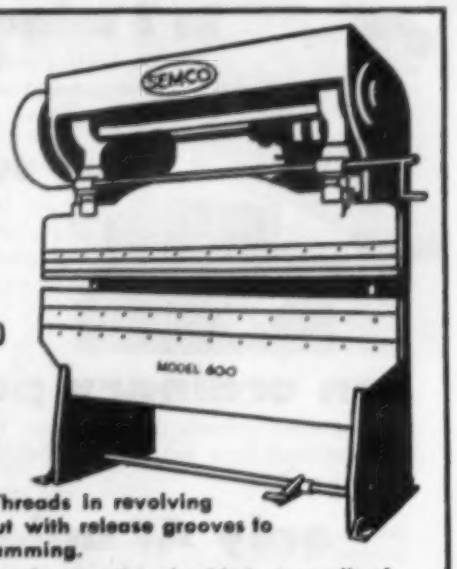
If you write maker identify as IEN - 8891

NEW PRESS BRAKE

IN TWO SIZES 6 FT. and 8 FT.

• LOW PRICED •

BIG PRESS FEATURES



- Buttress Threads in revolving bronze nut with release grooves to prevent jamming.
- One Piece Construction (welded, normalized, machined in one piece).
- Ball and Roller Bearings throughout.
- Fine adjustment.

Made by the makers of famous SEMCO "34 YEAR" BRAKE DIES.

Write for NEW color folder and prices of PRESS BRAKES and 26 standard BRAKE DIE designs. Send die specifications for estimate.

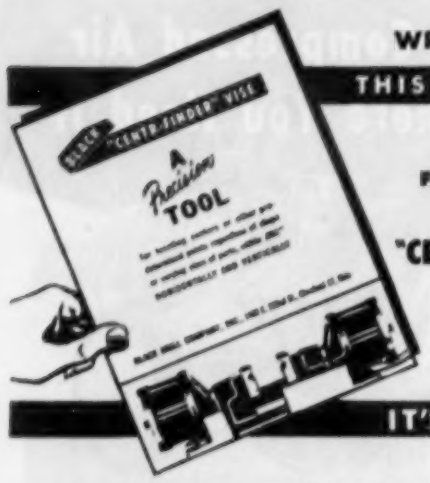
SEMCO

SERVICE MACHINE CO., INC.

200 Miller Street • Elizabeth 4, N. J.

If you write maker identify as IEN - 8892

WRITE FOR THIS BOOKLET



FEATURING THE BLACK "CENTR-FINDER" VISE

IT'S FREE

● Filled with practical information on this precision tool that locates centers within .001" vertically and horizontally—locates pre-determined points regardless of shape or varying sizes of parts. Tells how it operates—illustrates the vise in use on drilling and boring operations on non-symmetrical work. The facts in this booklet will show you how to cut costs on drilling, chamfering, hollow milling, deburring, reaming, tube flaring, and many other production operations.

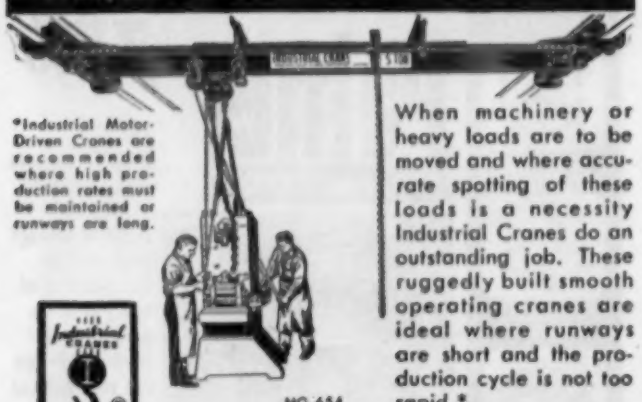
Write today for your copy.

THE BLACK DRILL COMPANY, INC.

1378 East 222nd Street • Cleveland 17, Ohio

If you write maker identify as IEN - 8893

USE *Industrial* HAND GEARED CRANES FOR GREATER ECONOMY



*Industrial Motor-Driven Cranes are recommended where high production rates must be maintained or runways are long.

When machinery or heavy loads are to be moved and where accurate spotting of these loads is a necessity Industrial Cranes do an outstanding job. These ruggedly built smooth operating cranes are ideal where runways are short and the production cycle is not too rapid.*

HG 654

INDUSTRIAL CRANE & HOIST CORPORATION
321 North Ada Street, Chicago 7, Illinois
Send Copy of Hand-Geared Crane Bulletin.
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COMPANY
ADDRESS
CITY, STATE

INDUSTRIAL CRANE & HOIST CORPORATION
(Formerly Industrial Equipment Co.)
321 North Ada Street, Chicago 7, Illinois
Overhead Cranes • Jib Cranes • Monorail Systems • Crane Runways

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-15

The trend toward mechanization moves along steadily. Each day additional products are developed and old ones revamped to eliminate the chance for human error in industrial operations. Most recently we have seen a host of new developments aimed at tying together the elements in a process to make the whole affair a continuous automatic action. Automation is the word for it.

The need for a reliable source for information on the makers of all these things becomes steadily more essential as their number increases and their complexity requires the names of not just one but often many manufacturers to contribute to a single assembly. There is where Thomas' Register comes in to do a job and to set up two angles with which you can tie in.

One angle considers you as a manufacturer, invites you to submit data on the products you make and the new things you have added in the past months for free listing in the "big books". Through these listings you will be telling your potential customers where they can contact you during 1955 and beyond. Tell your sales department to write to Thomas Publishing Co., 467 Eighth Ave., New York 1, N. Y., if it has not done so already, for the listing forms. There is no obligation.

The other angle considers you as a purchaser, suggests that you make certain your reservation is in for the 1955 edition. You will not be disappointed later, if you place your reservation now before the print order is set up. You can count on Thomas' Register to list all the verified makers of all the products made in the United States. In the listings are the ratings for each company, the products in alphabetical order, an alphabetical list of selected manufacturers and of trade names. There is a finding index also.

Make certain your own listings are in at this time. Make certain also that your purchasing agent has reserved a set of Thomas' Register for 1955.

YOUR INQUIRIES — IEN S-16

Reports come back to us, from time to time, of personal and telephone calls by salesmen following publicity on new products in the technical press. The reports we hear about are those in which the plant man receiving the call has been taken away from important work by the salesman or cases in which he cannot remember having inquired.

We check back on each such report because they represent a situation that is not good for the plant man, the salesmen or IEN. We find, in most cases, that the inquiry originated elsewhere than through IEN. This is particularly true since IEN has been employing the new reader service form on which you can check if you want contact with a salesman or not. Be certain to note the action you want from the manufacturer in each case and we will forward this information with your inquiry to him.

If you write maker identify as IEN - 8894

A PAID NEWS ADVERTISEMENT BY THE CARBORUNDUM CO.

75% LOWER POLISHING COSTS with Cone-Loc Drum Sander using coated abrasive strips

Low cost polishing is yours when you combine coated abrasive strips cut from Abrasive Rolls by CARBORUNDUM with the CONE-LOC Drum Sander—a light, balanced, safe polishing wheel used on flexible shaft tools or stationary bench grinders. The abrasive strips are held securely by the hinged halves of the wheel when the arbor nut is tightened against the locking cone washer. The assembled wheel performs the same as a solid wheel...cuts smoothly...is perfectly balanced...never bounces at the joint. It never loses diameter. Worn strips are replaced in seconds.

Compare the abrasive costs: Reheading a setup wheel 6½" x 1" costs approximately 21 cents. An abrasive belt of the same area costs up to 17 cents. A 22" strip of Metal Cloth, Industrial Cloth, Resin Industrial Cloth, or Waterproof Cloth—cut from a 1" Abrasive Roll by CARBORUNDUM—costs you 5 cents or less.

CONE-LOC Drum Sanders, with rubber or felt cushions for smooth, even cutting, are available in 6¼" diameter with 1", 1½" or 2" faces—and with rubber cushions in 8", 10" or 12" diameters with 2" faces. Distributed exclusively by your CARBORUNDUM Distributor. Call him—he's listed under "Abrasives" in the yellow pages. Or use the inquiry form provided by this publication. **The Carborundum Company,** Niagara Falls, N. Y.

"Carborundum" is a registered trademark of The Carborundum Company, Niagara Falls, New York

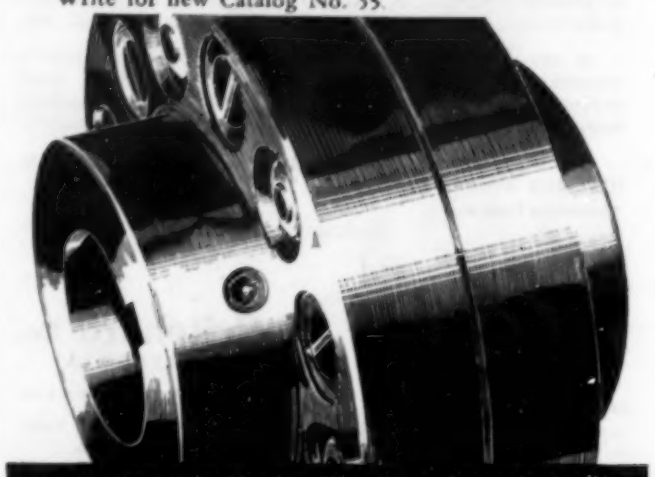
If you write maker identify as IEN - 8895

AJAX RUBBER-BRONZE BUSHED

flexible couplings

standard for 33 years

● Ajax Flexible Couplings are built on the principle that there is no substitute for quality. Protect performance and economy of the direct connected machines you design with Ajax Flexible Couplings. Write for new Catalog No. 55.



AJAX FLEXIBLE COUPLING CO. INC. • WESTFIELD, N. Y.

If you write maker identify as IEN - 8896

...FOR A JOB WELL DONE!

KATO ENGINEERED ELECTRICAL EQUIPMENT

KATO ENGINEERING has been building Special Electrical Equipment and machinery since 1928. Our modern, well equipped plant produces the finest in generators and electrical machinery from the smallest to the largest.

We Invite Your Inquiries on Special Requirements!

A. C. GENERATORS
Sizes from 100 watts to 300 K.W., in one or two bearings. Speeds of 720-3600 R.P.M., 60 cycles. Also 15-800 cycles, single and three-phase.

D. C. GENERATORS
Sizes ranging to 15 K.W.

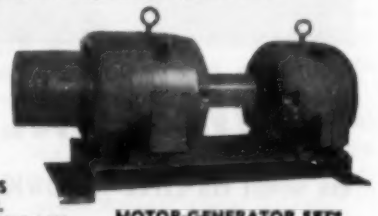
ROTARY CONVERTERS
For Changing D.C. to A.C.

HIGH FREQUENCY CHANGERS

D. C. MOTORS UP TO 10 H. P.

D. C. MOTORS WITH A. C. TAKE-OFF

A. C. MOTORS, SINGLE PHASE
1, 1½, 3 H. P.



MOTOR-GENERATOR SETS
D. C. to A. C., A. C. to D. C. 25 cycles to 60 cycles, 60 to 400 cycles.

KATO *Engineering Company*

WRITE TODAY FOR INFORMATION!

1478 FIRST AVENUE — MANKATO, MINNESOTA

If you write maker identify as IEN - 8897

SWECO VIBRATING SCREEN SEPARATORS

For virtually any material: Pulp & Paper, Ore, Chemicals, Grain, Clay, Sand & Gravel, Foods, Waste Material

Single or multi-deck (Up to 5 fractions)
10 to 325 mesh screens
Wet or dry material
Easy to adjust
Self-contained (Ready to plug in)
18" or 48" dia. models

New "3-D" screening action

The unique "spiral-gyratory" action of the SWECO floating-screen Separator tumbles the material in all three directions at once...results in faster, more efficient separation ...reduces blinding and clogging.

Send for illustrated catalog

Free analysis and recommendations

SWECO will make a detailed study of special screening problems without cost to you. SWECO Separators are sold on a guaranteed performance basis.

SWECO

"3-D" SEPARATORS

Engineers and Constructors ...Manufacturers

Southwestern Engineering Company 4800 Santa Fe Avenue, Los Angeles 58 Dept. 23-40 Cable address: SWECOLA

If you write maker identify as **IEN - 8898**

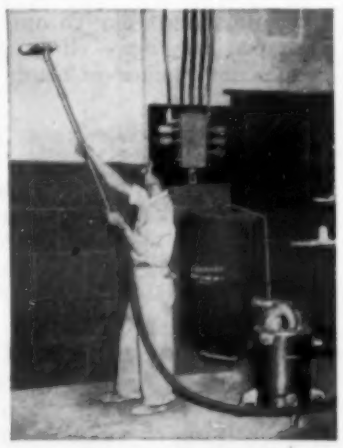
ELECTRONIC
AMPLICALL
INTERCOMMUNICATION

RAULAND-BORG CORPORATION
3515-K Addison St. • Chicago 18, Ill.

If you write maker identify as **IEN - 8899**

TORNADO®
TAKES A HAND in Plant Health and Safety

The Willette Corporation, New Brunswick, New Jersey, uses Tornado 92 to protect their employees from dust.



Manufacturers of ceramic bathroom accessories, Willette has a problem with the clay dust that accumulates on floors and ceilings. Sweeping with brooms only stirred up the dust.

Then Tornado took over! Their powerful Model 92 with suction velocity of 320 m.p.h. instantly removed this dust . . . collecting it for easy disposal.

If yours is an industrial cleaning problem, you will find that Tornado Cleaning boosts employee morale, improves safety and speeds up production.

Take advantage of the Tornado free offer to demonstrate right in your plant at no obligation. Just tell us time and place.

WRITE FOR BULLETIN 600 TODAY

BREUER ELECTRIC MFG. CO.
5108 North Ravenswood Avenue • Chicago 40, Illinois

If you write maker identify as **IEN - 8901**

Threading - Tapping head for heavy duty use on small machines

Source: ETTCO TOOL CO.
594 Johnson Ave., Dept. IEN, Brooklyn 37, N. Y.

Bulletin 22A

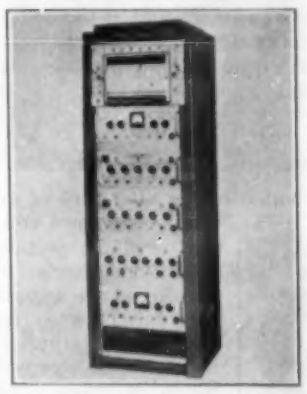
Illustrated is No. 3-B in the company's recently improved line of reversing tapping heads. This particular unit was developed for heavy tapping on small drilling machines. It employs a set of planetary gears, located beneath its steel clutch, to reduce tap speed to one-third the drill press spindle speed. This provides the power required to tap large holes on small drilling machines. The head has tap capacity from ¼ to ½ in. in steel. Recommended maximum speed is 1,200 rpm. **Weight is 11½** pounds. List price is $115.

The steel clutch, with a built-in fan, replaces a previous aluminum clutch. The fan whips oil, contained in the housing, into a fine mist and draws it across the clutch faces. Rubber bonded synthetic material has replaced leather for the friction faces. The assembly is enclosed in a ribbed die cast housing that is sealed prior to shipping. The rigid chuck spindle is supported at both ends by Oilite bushings. The spindle is equipped with the company's new visible grip tap holding chuck.

If you write maker identify as **IEN - 8902**

Testing - Oscillograph and amplifiers for 4 to 6 channels

Source: BRUSH ELECTRONICS CO.
3405 Perkins Ave., Dept. IEN, Cleveland 14, Ohio



Bulletin on request

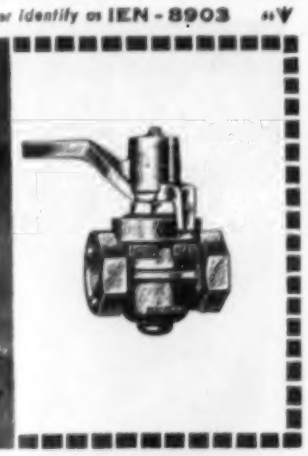
Illustrated is an assembly of the company's new multi-channel oscillograph and five of its Model BL-360 high gain carrier type amplifiers to make a record of variables such as strain, acceleration, torque, pressure, temperature, force. The electrically controlled chart drive permits instantaneous speed selection in a range of 16 chart speeds between 1 cm. per hr. to 250 millimeters per second. The carrier type amplifier provides a range of measurable strain from 2.5 to 40,000 microinches per inch with four active gages. Carrier frequency is 2,000 cycles per second.

The oscillograph can be mounted on roller slides in a standard 19-in. rack or furnished with a console for operation on a bench or cart. Ink writing and combination ink and electric writing units are available employing the company's electro dynamic pen motors to instant record static and dynamic phenomena from dc. to 100 cps., when used with the amplifiers, for a permanent record.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8903**

DeZURIK PLUG VALVES *for Positive* VACUUM SERVICE



OUT WEST, there's a much-talked-about new process for evaporative chilling of fresh lettuce under vacuum. DeZurik EASY-OPERATING PLUG VALVES were chosen for this revolutionary process.

IN MANY OTHER VACUUM SERVICES, DeZurik Valves are proving precisely right for the job. Their rubber-faced plugs seat AIR-TIGHT every time; the eccentric-shape plug won't stick, stretch or bind; takes only a quarter-turn from "open" to "shut". Write for details on this exclusive, trouble-free line of valves.

DEZURIK SHOWER CO. SARTELL, MINN.

NO LUBRICATION - NO FRICTION

If you write maker identify as **IEN - 8904**

Here's How to Solve Your Temperature Control Problems . . .
USE STANDARD KLIXON *Thermo Snap*® CONTROLS

Designers and manufacturers seeking accuracy and efficiency in temperature control rely more and more on *standard* Klixon Thermo-Snap Controls.

Actuated by the Spencer snap-action thermostatic disc, they snap open with a quick clean break . . . close to a solid make . . . always provide accurate control in every application whether it be in civilian or military products. Small and compact, they fit into products without complicated design or alterations. And because you can usually use *standard* Klixon Thermo-Snap Controls to do the job, you save money by eliminating special thermostat design.

Klixon Thermo-Snap Controls are available in many hermetically sealed and open types in a wide variety of operating temperature ranges. Write for complete information, today.

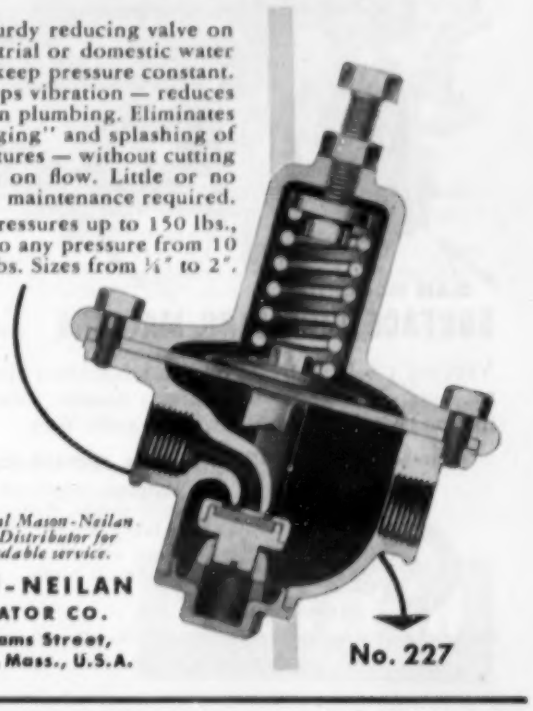
KLIXON
METALS & CONTROLS CORPORATION
SPENCER THERMOSTAT DIVISION
208 FOREST ST., ATTLEBORO, MASS.

If you write maker identify as **IEN - 8905**

STEP DOWN WATER PRESSURE
Quietly, Smoothly
WITH MASONEILAN Water Reducing Valves

Put this sturdy reducing valve on industrial or domestic water lines to keep pressure constant. Stops vibration — reduces strain on plumbing. Eliminates "singing" and splashing of fixtures — without cutting down on flow. Little or no maintenance required.

Initial pressures up to 150 lbs., reduced to any pressure from 10 to 100 lbs. Sizes from ¼" to 2".



Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1188 Adams Street,
Boston 24, Mass., U.S.A.

No. 227

If you write maker identify as **IEN - 8906**

Fastenings are small, but mighty important to the life of your equipment—especially when there's a corrosion problem. Prevent this danger—use Harper Everlasting Fastenings. In stock are over 7,000 different types and sizes to meet all requirements. Call your Harper Branch Office or Distributor. Write for information.

Specialists In All Corrosion-Resistant Fastenings

BOLTS, NUTS, SCREWS, RIVETS, WASHERS of BRASS, BRONZE, MONEL, ALUMINUM, STAINLESS

HARPER

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog 25.
Name.....
Company.....
Address.....
City.....Zone....State....

If you write maker identify as IEN - 8907

NEW AIRCO® H12A

WATER-COOLED HELIWELD HOLDER

for only $58.30

This new Heliweld holder gives you quality welds in thin-gauge aluminum, stainless steel, magnesium and copper alloys with ease and convenience . . . and at a highly attractive price. Weighs only four ounces and is 7½ inches long. Continuous duty rating of 125 amps AC or DC. Ideal for long-run jobs, yet welds tight corners without short arcing. Gastight "O"-ring seals in the nozzle and cap assembly. Low price includes holder, collet, nozzle, cap assembly and cable assemblies.

See your Airco dealer, or write today for "Heliwelding Catalog" #2300.

AIR REDUCTION
60 E. 42nd Street
New York 17, N. Y.

Foreign subsidiaries:
Air Reduction Canada Limited
Cuban Air Products Corporation

Divisions of Air Reduction Co., Inc.
Air Reduction Sales Co.
Air Reduction Pacific Co.
Represented internationally by
Airco Company International

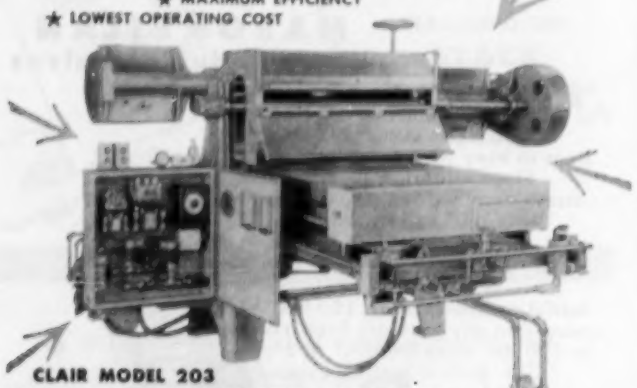
at the frontiers of progress you'll find

If you write maker identify as IEN - 8908

Investigate this CLAIR Machine

. . . for Surface Finishing your products!

★ FROM ROUGH GLAZE TO MIRROR FINISH
★ MAXIMUM EFFICIENCY
★ LOWEST OPERATING COST



CLAIR MODEL 203

SURFACE FINISHING MACHINE

Vacuum chuck solves problem of surface finishing non-magnetic items, including brass, copper, silver and aluminum. Work surface is 38" wide x 48" deep.

Write for Bulletin 203

A FEW APPLICATIONS

Compacts, cigarette cases, lithograph sheets, flatiron sole plates, blanking stock, kick and push plates, fan blades, name plates, escutcheon plates.

CLAIR
MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

If you write maker identify as IEN - 8909

PRODUCT-PROVED WIRE

CONTINENTAL STEEL CORP. STEEL CONTINENTAL WIRE KOKOMO, IND.

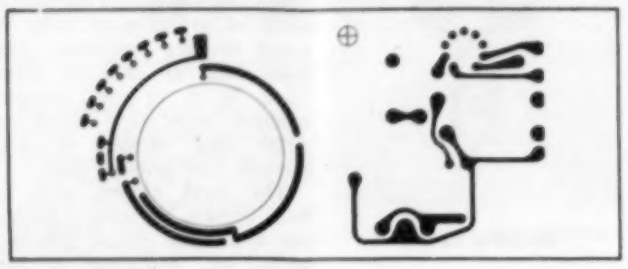
● The worth of Continental wire has been *proved* in the products of hundreds of leading manufacturers. Continental wire is uniform in temper, uniform in coating. Whether your need is for a rust-resistant wire that can stand up under difficult forming operations . . . or for a shaped wire to provide smarter-looking, longer-lasting trim . . . Continental wire can help you build a better, more profitable product. Write Continental at Kokomo.

CONTINENTAL STEEL CORPORATION

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for action, each to provide ideas for you

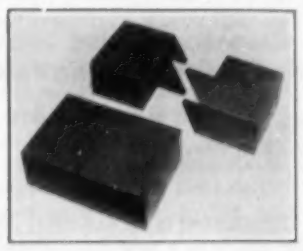
If you write maker identify as IEN - 8910

New facilities have been installed by U. S. Engineering Company, 521 Commercial St., Dept. IEN, Glendale 3, Calif., for



mass production of printed and etched circuits in any required size to a maximum of 18 by 18 inches. The company is prepared to work to customer's prints and can meet all military specifications. It offers 24-hr. service on quotations and will supply samples on request. One of these is illustrated.

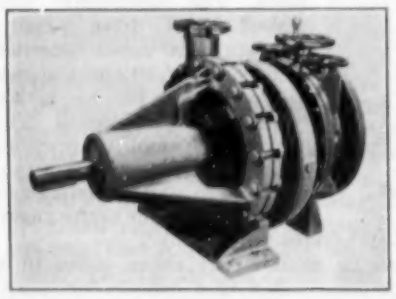
If you write maker identify as IEN - 8911



Two or more individual boxes are joined by interlocking arms in a new Gerber Interlock packaging case. The case is designed to permit "breaking" by the wholesaler without exposing any of the contents. Completely sealed units result when the sections are cut apart. Hinde & Dauch, 337 Decatur St., Dept. IEN, Sandusky, Ohio, can supply the case to fit your products.

If you write maker identify as IEN - 8912

Internal bypass mechanism, bolted to the inlet face of an Allis-Chalmers converted single suction centrifugal pump, is employed to adjust clearance between the revolving impeller and a stationary wear plate cylinder. The mechanism controls flow from the discharge nozzle by bypassing fluid within the pump. This enables the operator to set the action for a desired combination of capacity and head when handling fluids from water to 5 per cent paper pulp. Ask Allis-Chalmers Mfg. Co., 909 S. 70th St., Dept. IEN, Milwaukee 14, Wis., for data on pump Type ACAP.

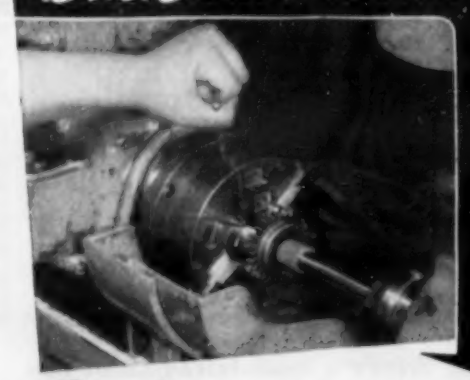


All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8913

SHOP SUPT. SAYS...

"Buck Cuts Time-Costs-Waste!"



CUTS TIME 30% • CUTS COSTS 50% • CUTS REJECTS 15% to 20%

Buck on Grinders-Lathes

AJUST-TRU
PAT. NO. 2,639,157

CHUCKS

Only universal scroll chuck with .0005" precision—for lathes, grinders, dividing heads, screw machines.

3-jaw and 6-jaw in 4", 5", 6", 7½", 9" sizes. 3-jaw Aviation chucks, for odd-shaped parts, in 6", 7½", 9" sizes.

ALSO SUPER-GRIP 4-JAW INDEPENDENT CHUCKS FOR 9" to 16" LATHES.

Globe Gear Co., Royal Oak, Mich., makes this report. They use Buck 6"-6 jaw and Buck 6"-2 jaw Ajust-Tru Chucks on the Parker-Majestic Internal Grinder, South Bend Lathe and Monarch Lathe for drilling, boring, reaming.

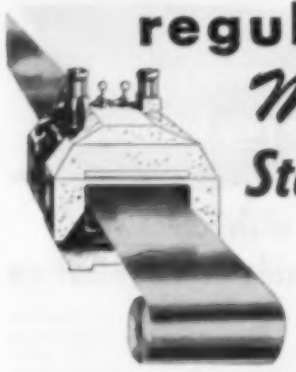
On work held to .0005" precision they report a 30% saving of time compared to previous methods . . . 50% cost saving per operation . . . and 15% to 20% reduction in rejects.

You too can save every time you use Buck Ajust-Tru Chucks. They adjust to dead true precision within one minute . . . guarantee .0005" precision on duplicate rechucking . . . eliminate special collets, reduce need for stub arbors, mandrels, special fixtures. No price premium for Buck chucks. Send for catalog today.

BUCK TOOL COMPANY
816 SCHIPPERS LANE • KALAMAZOO, MICH.

If you write maker identify as IEN - 8914

regular use of MicroRold® Stainless Sheets SAVES MONEY!

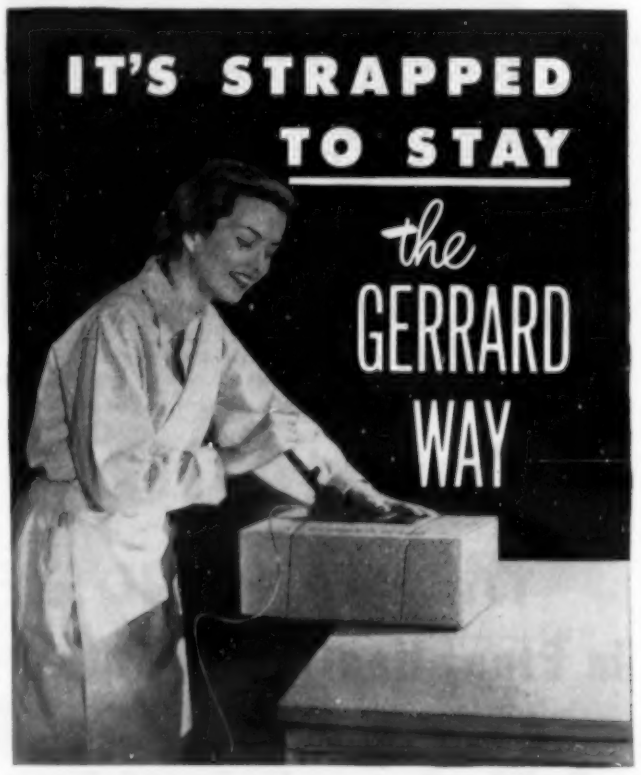


Stainless sheets are usually ordered by gauge number—with permissible A.I.S.I. thickness variation of plus or minus 10%—but are sold on a weight basis. Thus, you may order 18 gauge, needing about .0475" thickness, and receive .052" thickness. But MicroRold may be held to a 3% plus or minus tolerance; and you may order by gauge number, specifying that it be rolled on the "light side" of the gauge range. While these savings may not be apparent in every single sheet of MicroRold, the weights will average less than the theoretical when figured over a period of time. These savings can be substantial in your annual profit picture.

Washington Steel Corporation
WASHINGTON, PENNSYLVANIA

If you write maker identify as IEN - 8915

IT'S STRAPPED TO STAY the GERRARD WAY



STRONGER USS GERRARD Round Strapping is made of uniform, high-quality steel. Flexible and easy to apply, it conforms to any shaped package—clings snugly to all contours, does not weaken at bends and turns.

FASTER The GERRARD Model "Q" semi-automatic tying machine makes 12 to 15 secure, pilfer-proof ties per minute using Round Strapping, and GERRARD'S hand-operated stretchers and sealers operate quickly and easily on USS GERRARD Flat Steel Strapping.

COSTS LESS USS GERRARD Round Strapping actually costs about 40% *less* than any other form of metal reinforcement. And you'll realize an additional savings by making GERRARD your single source for both Round *and* Flat Steel Strapping. One source buying reduces freight charges, and cuts paper work in half.

Contact a GERRARD Engineer for assistance in solving your packaging-tying problems. His free advice can help you improve your operation—in both efficiency and economy. Write to:

GERRARD STEEL STRAPPING DIVISION,
UNITED STATES STEEL CORPORATION
4701 South Richmond St., Chicago 32, Ill.

USS

USS GERRARD STRAPPING

ROUND STEEL — FLAT STEEL

UNITED STATES STEEL

If you write maker identify as **IEN - 8917**

Doubling Up Cuts Costs

with this TORIT

DUST COLLECTOR

Here a compact, self-contained Torit Dust Collector occupies otherwise unusable space. Short lengths of piping minimize friction losses. Cut-outs control air suction. Unit goes on or off at the push of a button. Here is efficient, low cost dust collecting.

Unseen but equally important are the years of dependable service you get from Torit Dust Collectors. The complete cleaning and recirculation of air maintains good working conditions, protects against abrasive dust damage and, in many operations, permits salvage of diamond wheel and other valuable dusts.

Torit Dust Collectors are economical to purchase, to install, to operate and to maintain.

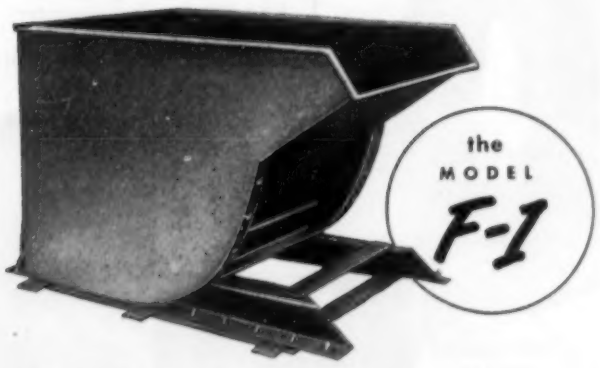
For the answer to your dust problems write:

TORIT MANUFACTURING CO.

286 WALNUT STREET • ST. PAUL 2, MINNESOTA

If you write maker identify as **IEN - 8918**

New Easy Way To Handle Bulk Materials!



Phillips *Phil-Dump*

Bulk materials of all kinds are handled with maximum efficiency at minimum cost . . . with the Model F-1 "Phil-Dump. Used with pallet or fork lift truck, it automatically dumps and returns to original position. Smooth, rolled edges of 3/16" steel plate, welded undercarriage provide safety, long-life, strength and durability. Capacity—1 cu. yd.

Write for Bulletin E-15

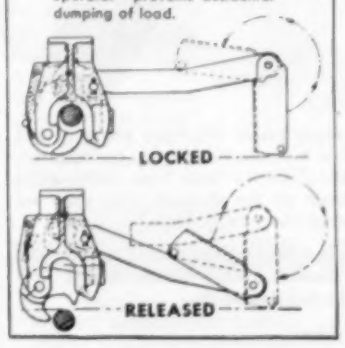
Heaviest materials easily handled with pallet truck.

Automatically dumps materials, returns and locks in original position.

Conveniently stacked, empty or full.

*New Safety Lock**

Provides maximum safety for operator—prevents accidental dumping of load.



Phillips

CORPORATION

(formerly Phillips Mine & Mill Supply Co.)

Manufacturers Since 1863

15 Arch Street, Carnegie, Pa.

IDEAS for YOU—*Continued*

If you write maker identify as **IEN - 8920**

Cast Optics Corp., 1010 Post Road, Dept. IEN, Riverside, Conn., is supplying its Cocor Clear optically clear plastics for

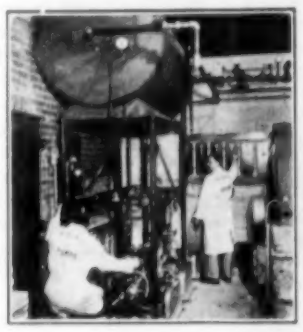
manufacture of a new paper bail for typewriters. The bail eliminates the bothersome "blind spot" on typed material in a typewriter. The plastic material is light in weight, optically clear. It has high impact strength and is resistant to surface abrasion. It will not craze in contact with solvents. It is available from stock in thicknesses from 0.020 to 1 in. and in sheet sizes to 38 by 96 inches.

If you write maker identify as **IEN - 8921**

Water repellency and resistance to staining by water borne soils are added to woolens and worsteds by a new Dow Corning 105 Emulsion. The new finish cures in 10 to 20 minutes at about 250 deg. F. Oily and greasy stains can be spot cleaned without leaving a tell-tale ring of solvent. Dow Corning Corp., Box 592, Dept. IEN, Midland, Mich., supplies the emulsion.

If you write maker identify as **IEN - 8922**

Vacuum, in sufficient "volume" to serve a number of vacuum frames, is supplied by a central assembly of six vacuum pumps connected to an 850-gal. tank. Any combination of pumps can be selected to meet given requirements for vacuum. Pumps and tank can be located remotely. When pump capacity exceeds demand, the pumps are by-passed by a vacuum switch and the air is used to keep the pumps cool. Perfection Mfg. Corp., 2125 E. Hennepin Ave., Dept. IEN, Minneapolis 13, Minn., can supply data and will build equipment.



If you write maker identify as **IEN - 8923**

You will be interested in a combination indicating and recording meter if you are employing any of the welding processes that involve use of inert gases. The meter enables you to gage your use of the gas as a factor in your welding costs. Flow rate can be controlled at the meter by turning a built-in needle valve. Elematic Equipment Corp., 6731 S. Chicago Ave., Dept. IEN, Chicago 37, Ill., is the supplier.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 8924**

ROBINSON METERING PUMPS

FORCIBLY EJECT EXACT METERED AMOUNTS OF:

ASPHALT • RESIN • PITCH • ROSIN ADHESIVES • STEARIC ACID and PLASTER OF PARIS • PORTLAND CEMENT AND VARNISH MIXTURE • SEALING COMPOUND • POLYAMIDE • PLASTISOL PASTES • GLYPTAL MIXTURES • RUBBER BAKELITE

Melt and meter materials that are solid at normal temperatures. Easy ejection through tiny apertures.

Any of 20 discharge quantity settings can be changed in 2 seconds (one model has 50 settings) without tools.

Eject accurately .04cc to 370cc in 2/3 second.

Thermostatic heat from 70° to 500° F . . . Viscosities from #10 S.A.E. oil to 200,000 centipoises.

Unskilled operators quickly learn to do neat, clean work.

The versatile Robinson Metering Pumps may be the economical solution to one of your production problems. Write for free folder.

EDWARD E. ROBINSON

INCORPORATED

P.O. Box 47

95 PARK AVE. • NUTLEY 10, NEW JERSEY

Telephone NUtley 2-4510

If you write maker identify as **IEN - 8925**

Now Available in 3, 4 and 5 ft. Sections

The new AAF Multi-Duty Filter is tailored to fit the tight spots! Addition of the 5-ft. section permits most economical combination of filter widths to fit limited space. Over-all depth of filter is reduced 5½ inches.

Greater versatility, lower installation costs, important space savings—you get them with the new Multi-Duty, plus the proved performance of America's "most specified" automatic, self-cleaning air filter. Write for Bulletin 241.

AAF American Air Filter

COMPANY, INC.

335 Central Avenue, Louisville 8, Kentucky

American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as **IEN - 8926**

Model C67AD

POWERFUL — Drives staples with far greater force, faster and with less effort than is possible with hand-operated machines.

FAST — One-hand, trigger operation. Loads quickly with ¼", ⅜" or ½" staples.

3 MODELS — Available with 3 types of clinching blade: "C" blade and "openhead" blade for sealing overlapped flaps of corrugated containers, and straight blade for ordinary stapling.

Write for Bulletin 272. BOSTITCH, 648 Mechanic Street, Westerly, R. I.

FASTEN IT BETTER AND FASTER WITH

BOSTITCH®

STAPLERS AND STAPLES

If you write maker identify as **IEN - 8927**

You tape it best with F.O.S. Industrial Tape . . . product of

THE SEAMLESS RUBBER COMPANY

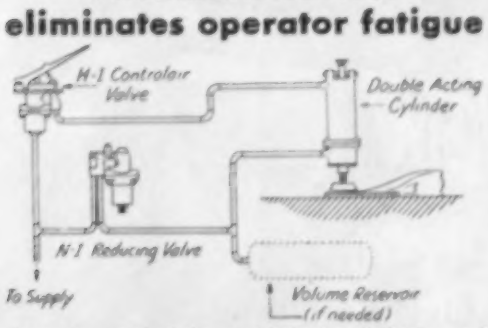
NEW HAVEN 3, CONN., U.S.A.

Write for samples, literature, prices

†Friction One Side

If you write maker identify as IEN - 8928

Pneumatic control eliminates operator fatigue



• An eastern manufacturer of ladies' pocketbooks wanted a better control system for his 15 small presses. He wanted a control that would apply light pressure to a pocketbook frame while the operator fitted material into the frame. Then, full pressure was needed to clinch the frame. A pneumatic system supplied by Westinghouse Air Brake Co. was the perfect answer.

The operator controls the pressure to the press with a Westinghouse foot-operated Controlair® Valve. He can select the exact force he needs; and both his hands are always free to work on the pocketbook. As a result, the work is less tiring for the operator; and he can work faster and more accurately. Scrap loss has been reduced.

Westinghouse pneumatic controls can give the same advantages on your machines. Write for information, or call the nearest Westinghouse Air Brake Distributor.

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION — WILMERDING, PENNA.

Factory Branch: Emeryville, Calif.
In Canada: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

If you write maker identify as IEN - 8929

SHENANGO Centrifugal CASTINGS ... KEY TO SAVINGS

Precision-machined by Shenango for paper making machinery are these two centrifugally cast bronze wire stretch rolls with Meehanite Metal heads and steel journals. Note the special water slinger ring on the head.

Shenango methods . . . Your gain!

SHOWN above are 15-foot wire stretch rolls of centrifugally cast bronze. From end to end, inside and out, these and all Shenango centrifugal castings are uniform in high quality.

The carefully controlled centrifugal casting process developed by Shenango assures exceptionally fine pressure-dense grain and freedom from costly imperfections. For you, these features mean trouble-free performance and wear resistance, minimum maintenance, and the ability to withstand abnormal loads and speeds. Yes, increased savings from every angle.

Shenango is prepared to supply either rough castings, semi-machined or precision-finished parts and assemblies in either ferrous or nonferrous metals. For further information and data on meeting specific needs, write to . . .

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO
COPPER, TIN, LEAD, ZINC BRONZES • MONEL METAL
ALUMINUM AND MANGANESE BRONZES • NI-RESIST • MEEHANITE METAL

If you write maker identify as IEN - 8930

Molded rubber parts by Houghton fit your needs three ways! **1.** They *fit*—precision-molded to your specs! **2.** You'll get *prompt service*—teamwork speeds your order through production without delay! **3.** Price is right—aimed to keep your costs down! Our manufacturing facilities and engineering staff are at your service . . . what are your needs? *Address E. F. Houghton & Co., 303 W. Lehigh Ave., Phila. 33, Pa.*

VIX-SYN Molded Rubber Parts . . . products of

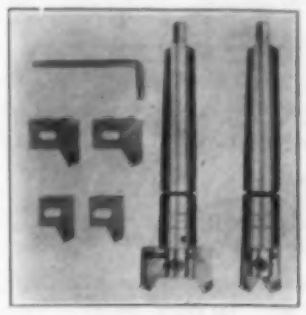
E. F. HOUGHTON & CO.
PHILADELPHIA • CHICAGO • DETROIT • SAN FRANCISCO

Ready to give you on-the-job service . . .

If you write maker identify as IEN - 8931

Drilling - Adjustable cutter for holes to 1½ and to 2 inches

Source: HAYDEN TWIST DRILL CO.
8626 Lyndon Ave., Dept. IEN, Detroit 38, Mich.



Patent 2660075

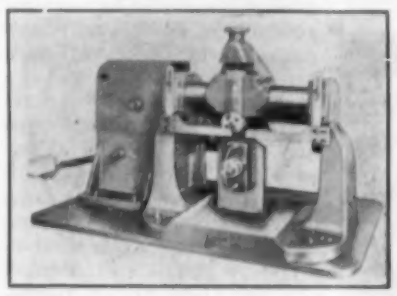
Illustrated is a new size in the company's adjustable double blade cutter to supplement its previously developed 2 and 4-in. units. Two sets of blades range from 1 to 1½ in. in hole diameter and from 1½ to 2 inches. Application is in a drilling machine, turret lathe, boring machine, after a standard twist drill has been used to cut a hole at least ¾ in. in diameter. The cutter is then applied to enlarge this hole by successive adjustments until it is a required size.

The toothed hardened blades are available in high speed steel or with carbide tips. They engage a scroll on the holder shank for axial adjustment. A clamp, back of the scroll, adds its holding action to the set screw in the shank. The shank is fitted with a No. 3 Morse taper. Overall length is 7½ inches. List price, with the two sets of high speed steel blades and a wrench, is $80. List with carbide tipped blades is $90.

If you write maker identify as IEN - 8932

Marking - Motor driven machine, flat or curved work, uses steel type

Source: ACROMARK COMPANY
7 Morrell St., Dept. IEN, Elizabeth, N. J.



Manual feed

Sliding head is reciprocated by power in this new Model 90-A marking machine to carry a rotating type holder over flat work or a flat type holder over round or cylindrical work. Stroke length is 8 inches. A part measuring 9 in. or less in thickness can be handled. The machine measures 36 by 18 by 24 inches. As many as 20 pieces per minute can be marked when handling light weight parts. Control centers at an operating lever on one side. The type are interchangeable in the head.

If you write maker identify as IEN - 8933

If you need large amounts of chilled water for process use and for air conditioning you will be interested in reading an article reprint offered by Ingersoll-Rand Co., 11 Broadway, Dept. IEN, New York 4, N. Y. It concerns an installation of the company's steam-jet water-vapor equipment. Low pressure steam jets pull a vacuum on an evaporator causing some of the water sprayed into the evaporator to flash into steam. The heat thus absorbed is extracted from the remainder of the water. The entrained vapor and air are carried into a barometric condenser where they rise through a cascade of falling water.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as IEN - 8934

ELASTICONE® GUIDE PIN COVERS

CUT DIE COSTS 25%

Low-costing Elasticone Guide Pin Covers reduce die breakage; protect man & machine — closes the gap between pins and bushings.

Just snaps into place—no installation costs. Manufactured in stock sizes.

Write for full information and literature.

CENTRAL
2204 EAST HUNTINGDON ST.
PHILA. 25, PA.

CENTRAL SAFETY EQUIPMENT COMPANY

If you write maker identify as IEN - 8935

Yes! THRIFTMASTER makes *ALL TYPES* of DRILLHEADS

Universal Joint Drillhead . . . Full Ball or Bronze Bearing Construction Standard and Heavy Duty. From ½" Minimum Centers up. Capacities to 1" in Steel.

Gear Driven Eccentric Type Adjustable Drill Head . . . Enclosed, Full Ball Bearing Construction.

Special Fixed Center Drillhead . . . Full Ball Bearing Construction.

- **We Stock or Can Build the Right Drillhead for Your Job.**
- **Write for THRIFTMASTER Complete Catalog or phone for a rush, on-the-spot, quote.**

Subsidiary of Thomson Industries, Inc.

THRIFTMASTER *Products Corporation*
1040 N. Plum Street
LANCASTER, PENNA.

Also Makers of
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as IEN - 8936

for efficiency . . .
for dependability . . .

COMAR RELAYS

are your best buy

Comar Relays, "tailor-made" to fit the job, are easier to install, more efficient, more dependable. You get the EXACT electrical characteristics and physical size you want . . . you get custom quality . . . yet you pay no more.

Our Engineers Will Help You
We invite you to submit your relay problems and specifications for our recommendations. No cost or obligation.

TOP QUALITY RELAYS CUSTOM-ENGINEERED FOR USE IN COMMERCIAL AND MILITARY APPARATUS

Comar ELECTRIC COMPANY
3349 ADDISON STREET
CHICAGO 18, ILLINOIS

RELAYS • SOLENOIDS • COILS • TRANSFORMERS • SWITCHES • HERMETIC SEALING

If you write maker identify as IEN - 8937

Du-Lite

"Gives our tools Sales Appeal"

BARNABY MFG. CO. of Bridgeport, Conn., reports: "Our close proximity to salt water has given us problems in rust prevention for many years. We have experimented with many black oxide finishes but none has proven as successful, safe, and inexpensive as DU-LITE—our tools have better sales appeal—our volume has been on the increase ever since we started using this modern, progressive oxide finish."

Depend on Du-Lite, the metal-finishing specialists, for the most efficient and economical cleaners, black oxide finishes and phosphate coatings. Write for full details on:

Du-Lite Black Oxide for Steel.
3-0 Black Oxide for stainless steel and malleable iron.
SD Compound for removing occluded salts.
Phosteel and Phospray for phosphatizing steel, iron or zinc.
Du-Lite Non-Acid Black Oxide for copper and copper alloys.
Dynakleen for bright cleaning all metals.
Kwikseal and Procteil water displacing oils.

Or send us samples of parts and we will process them for your approval.

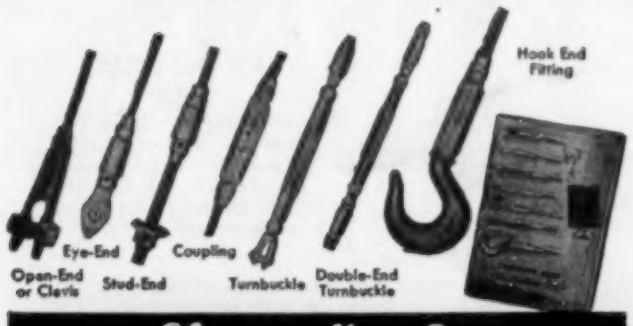
Du-Lite DU-LITE CHEMICAL CORP.
MIDDLETOWN • CONN.
METAL FINISHING SPECIALISTS

If you write maker identify as IEN - 8938

Cut out needless re-roping costs

USE ELECTROLINE WIRE ROPE FITTINGS

In minutes, ordinary labor can install Electroline fittings that will hang on for all time. Prolong wire rope life by damping vibration stresses thus eliminating wire rope fatigue at the fitting. Write for Electroline Catalog. It points out many savings—no cost.



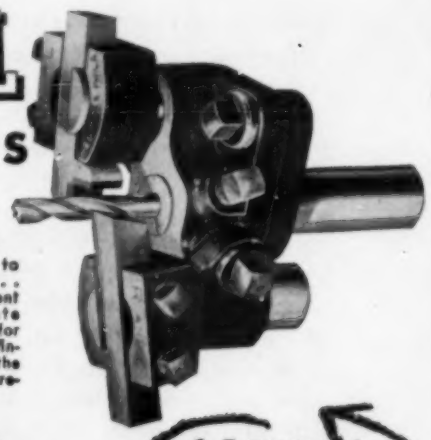
Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

If you write maker identify as IEN - 8939

MORE PRODUCTION... .. GREATER ACCURACY .. .. LOWER COSTS!

With

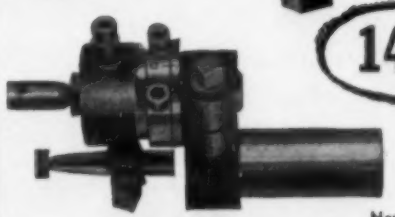
R AND L TOOLS



TURNING TOOL

Changes from right to left in ten seconds . . . Replaces an assortment of fourteen separate tools. It can be used for rough as well as finished cuts, meeting the most difficult job requirements.

14 TOOLS IN 1



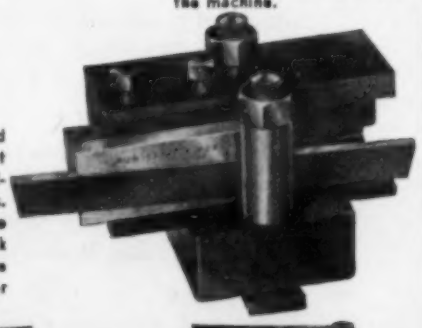
RECESSING TOOL

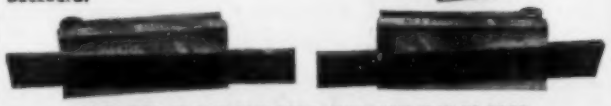
Newly designed . . . available in three standard sizes, (⅝", ¾", and 1" shank.) Adjustable to operate on both internal and outside diameters . . . with spindle running right or left. Each tool can be adjusted to handle any diameter within the capacity of the machine.

IT'S NEW!

UNIVERSAL TOOL POST

Precision manufactured to hold square or flat tools, which can be adjusted in all directions. Can be used close to chuck, on front or back cross-slide with spindle running forward or backward.





CUT OFF BLADE HOLDERS AND CUT OFF BLADES
Specially designed and flawlessly made to fit R and L UNIVERSAL TOOL POST. Holders can be set to cut off work as close to chuck as desired.

RIGHT R AND L LEFT TOOLS

Write for Catalog

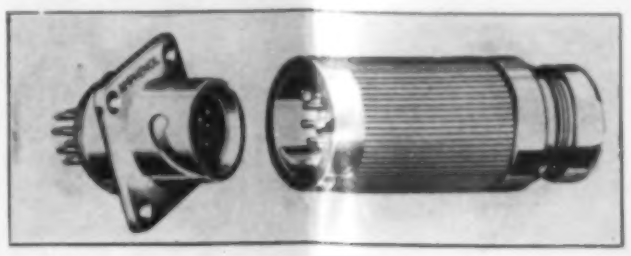
TURNING TOOL • TAP AND DIE HOLDER (Releasing or non-releasing—also furnished for Acorn Dies) • CARBIDE OR ROLLER BACKRESTS • UNIVERSAL TOOL POST • TURRET BACKREST HOLDER • CUT-OFF BLADE HOLDER • RECESSING TOOL • REVOLVNG STOCK STOP • FLOATNG DRLL HOLDER • KNURLNG TOOL

1825 Bristol Street
Philadelphia 40, Pa.

If you write maker identify as IEN - 8941

Connector - Miniature assembly mounts 5 to 24 gold plated contacts

Source: AMERICAN PHENOLIC CORP.
1830 S. 54th Ave., Dept. IEN, Chicago 50, Ill.



For aircraft, rockets, missiles

Series 165 designates a new line of miniature AN connectors now available in two sizes. Both are pressurized but are not hermetically sealed. The female unit features a sandwich type construction for the inner seal with the containing cartridge spun over and sealed at the factory. The outer seal is completed with a silicone O-ring. Hard-Cote finish is anodically formed on the aluminum shells. Contact sizes are No. 20 and No. 16.

If you write maker identify as IEN - 8942

Cleaning - Calcined silica absorbs liquid and grease from floor

Source: SOAKUP CORPORATION
640 Chestnut St., Dept. IEN, Grand Rapids 2, Mich.

Acts like a sponge

Soakup trade names a new granular material consisting of calcined aluminum silica. The material is brushed over a floor where it will absorb free flowing liquids in a few seconds. The material is dustless and clean, sterile and inert. It can be employed to absorb oil, water, grease, paint, blood, sugar, rubber cement, acids. Packaging is in bags containing 1½ cubic feet. Weight is about 7½ lb. per cubic foot.

If you write maker identify as IEN - 8943

Motor Control - Manual starter with selector switch, rating to 1 hp.

Source: SQUARE D COMPANY
4041 N. Richards St., Dept. IEN, Milwaukee 12, Wis.

Bulletin 2510-A

Maximum rating is to 1 hp. on dc. or single phase ac. at 110 or 220 volts for this new combination assembly of manual starter and selector switch. The switch is turned to make connection for remote control from a thermostat or local control from the starter. The starter provides motor overload protection. The new assembly is in a housing that measures about 5¼ by 4½ by 3½ in. from front to back. It is designed particularly for application on air conditioning and heating units. Designation is Class 2510 Type AG-10.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8944

BRAZING?

GET YOUR **FREE** COPY!

48 PAGES—FULLY ILLUSTRATED

Get this compact library of brazing data that every design and production engineer—every brazing technician and buyer of brazing materials should have! It is the most complete guide available. Send for your free copy today.

THE AMERICAN PLATINUM WORKS
231 New Jersey Railroad Avenue • Newark 5, N. J.

If you write maker identify as IEN - 8945

We make Multigrip to help you stop
Costly accidents in your plant or shop:
To help you reduce the extra cost,
Of slips and falls and man-hours lost.
And frequent repairs and replacing the floor,
Will be things of the past to plague you no more.
So for long, cost-less life with none of these cares,
Install Multigrip . . . on floors, aisles and stairs.

USS multigrip FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 4-1070A

UNITED STATES STEEL

If you write maker identify as IEN - 8946

M·S·A-LAMB AIR-MOVER

For Rapid Movement of Large Volumes of Air

This practical, portable ventilating device uses only compressed air or steam—no auxiliary motors, turbines or fans. No up-keep because there are no moving parts. Three sizes—3 in., 6 in., and 10 in. Largest size moves as much as 5,160 cu. ft. of air per minute. Write for details.

FORCES FRESH OR COOL AIR IN ←→ *SUCKS FUMES OF GASES OUT*

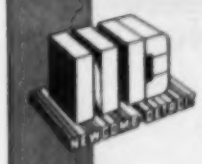
MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
201 N. Braddock Ave., Pittsburgh 8, Pa.
76 Branch Offices in the United States

If you write maker identify as IEN - 8947

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



INDUSTRIAL OVENS • SPRAY BOOTHS • PARTS WASHERS • DUST COLLECTORS • HEAT and AIR SYSTEMS

ESTABLISHED 1912
• DETROIT DIVISION
• GRAND RAPIDS DIVISION
• NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St.,
Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN - 8948

JOHNSON BAND SAWS

SPECIFICATIONS—MODEL B

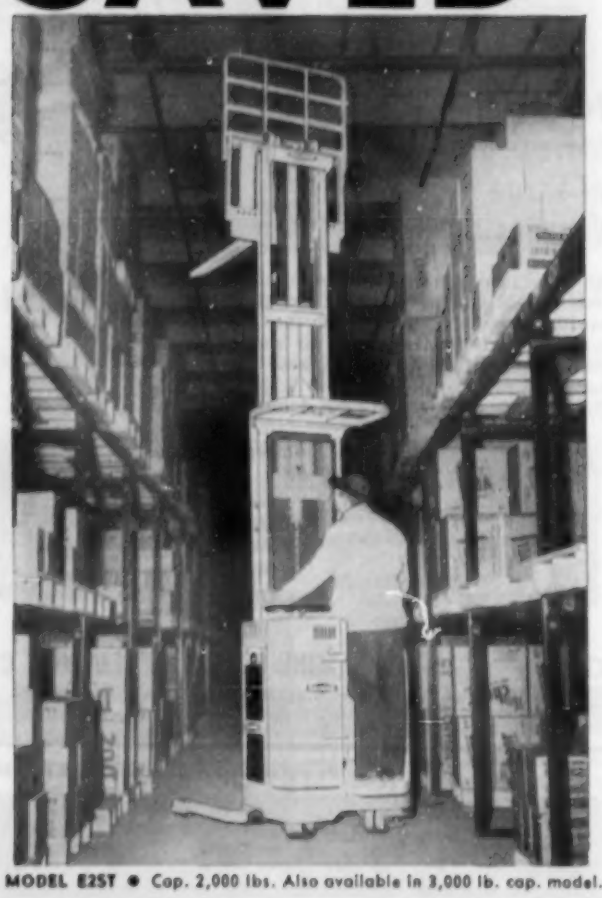
Capacity—5" rounds, 10" flats.
Height Overall—(Closed)—32".
Blade Length—7'5" x ½" x 23 ga.
Floor Space—46" x 28".
Weight—(Uncrated) 235 lbs. Crated 280 lbs. Boxed for Export 400 lbs.
Wheel Diameters—10"
Motor—½ H.P. any voltage available.
Speeds—45, 90 and 150 ft. per min.
Casters—Optional at slight extra cost.

MODEL J, 10" X 18" CAPACITY ALSO AVAILABLE
WRITE FOR DETAILS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 8949

SAVED



MODEL E2ST • Cap. 2,000 lbs. Also available in 3,000 lb. cap. model.

6 FT. in EVERY AISLE

with

RAYMOND Electric TIERING TRUCK

ANOTHER LARGE WAREHOUSE actually halved its aisle space with a RAYMOND Tiering Truck! 12-ft. aisles were reduced to 6-ft. Result: more useable storage space.

You can make space savings in your own plant or warehouse. Because this truck actually right-angle tiers 4-ft. pallet loads from aisles only 6-ft. wide.

RAYMOND TIERING TRUCK . . . operates in narrow aisles due to its short length and patented* off-set drive wheel with 200° turning arc. Lightweight permits use on low-capacity elevators, floors. 51" free lift enables loads to be stacked in low-ceiling areas, truck trailers, boxcars without increasing overall height. Truck is equipped with new power unit that opens up like a book for fast, easy servicing.

*PATENT NO. 2,564,002

GET FULL DETAILS!

The RAYMOND CORPORATION
3541 Madison St., Greene, N.Y.

( ) Please send Bulletin 830 describing 2,000 lb. cap. Tiering Truck.
( ) Please have your representative call.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 8951

Recording - Two axis plotter traces data on standard graph paper

Source: F. L. MOSELEY COMPANY
409 N. Fair Oaks Ave., Dept. IEN, Pasadena 3, Calif.

Plots Y-f(X)

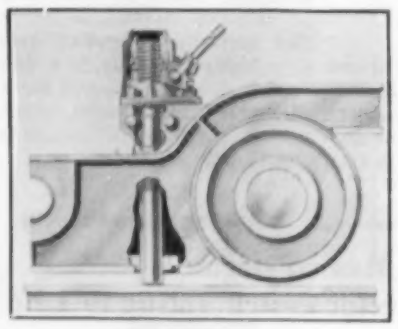
Model 2 designates this new flat bed Autograf X-Y recorder for use with 11 by 16½-in. standard graph paper. It represents further development of the original model, previously described IEN-13604-53. The new unit permits observation and labeling while a curve is being drawn. Speed is 1 sec. for full scale on both axes. Overall dimensions are 23 by 16½ by 8½ inches. Weight is about 45 pounds.

Independent servo actuated transformer isolated drives are provided. Input is free from ground. Maximum sensitivity is ½ millivolt per in. on both axes. The instrument will plot data in any desired quadrant. Full range zero set is provided. A curve follower attachment, or modification for digital point plotting, can be specified with equipment such as keyboards, card and tape readers.

If you write maker identify as IEN - 8952

Jack - Worm and gear design for built-in application on a crane

Source: DUFF NORTON MFG. COMPANY
2709 Preble Ave., Dept. IEN, Pittsburgh 30, Pa.



Helps maintenance

Crane wheels are lifted from their track for servicing by application of this new worm and gear operated screw jack. The assembly is designed for built-in application on the crane truck, as shown in the illustration, with an individual jack for each wheel. Load rating is 25 ton. Operation is by a hand lever and ratchet. The jack housing is sealed so the parts operate in a packing of grease and dirt cannot enter.

Permanent installation eliminates need for separate jacks and materially simplifies the operation of bearing and wheel replacement as well as general lubrication. The load screw measures 3⅜ in. in diameter. Length of the screw is determined by the crane truck on which the jack is assembled.

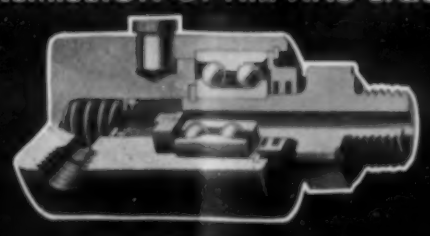
If you write maker identify as IEN - 8953

A pencil eraser can be applied to any typing error and, with negligible pressure, the error can be rubbed out without leaving a ghost or scuff mark on the new Hemlock Erasable paper. It is available in a range of weights and sizes and is white in color. It is a rag content paper. Samples and information are available from Hemlock Paper & Envelope Co., Box 86, Dept. IEN, Bayonne, N. J.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8954

FAWICK ROTORSEAL
PROVIDES TROUBLE-FREE
TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

FAWICK AIRFLEX DIVISION
FEDERAL FAWICK CORPORATION
9919 CLINTON ROAD
CLEVELAND 11, OHIO

Write for ROTORSEAL Bulletin ML-6.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

If you write maker identify as IEN - 8955

STOP COMPRESSED AIR LOSSES WITH LUNKENHEIMER AIR DEVICES

AIR COCKS

Stainless steel spring in heavy bronze body automatically takes up wear, insuring tightness. Stop lugs cast on body serve as positive open and closed stops. Operates easily, stays tight, and requires no packing.

Fig. 1571
150 lb.

AIR NOZZLES

Correctly designed for positive shutoff—also available with interchangeable flat tip, 10-inch extension tip, and serrated male hose-end.

Fig. 1841 PT
150 lb.

ASK ABOUT our complete line of Lunkenheimer Air Devices or write for literature.

THE LUNKENHEIMER CO.
CINCINNATI 14, OHIO

LUNKENHEIMER
THE ONE Great NAME IN VALVES

L-153-37

If you write maker identify as IEN - 8956

Reduce Lost Man Hours

"Kerodex" Gives New and Improved Barrier Protection Against Contact Dermatitis

"Kerodex" is a new and improved barrier cream which offers maximum protection against hundreds of primary irritants and sensitizing agents encountered in industry. It provides an effective protective coating which is invisible yet strong and as elastic as the skin itself. It protects against initial contact. It prevents the recurrence of a dermatitis after recovery.

Special Advantages

"Kerodex" offers practical and effective protection *before* the damage is done. It is nonirritating and nonsensitizing. It may be applied with equal safety to the face, hands or any other area of the skin, keeping pores and follicles free from foreign matter.

"Kerodex" does not smear. It does not affect materials handled, nor is it affected by them. It is easy to apply, economical and highly acceptable to the user.

"Kerodex" provides a vital safety measure for the maintenance of high production levels.

Maximum Protection

"Kerodex"® is supplied in two types, and a series of creams are available to protect against: *water-soluble* irritants such as acids, alkalis, soaps, detergents, and *water-insoluble* irritants such as paints, enamels, cleaning fluids.

Write for Information

We'll be happy to send you complete descriptive literature, or to have our representative call at your convenience.

Ayerst Laboratories, 22 East 40th Street, New York 16, N. Y.

If you write maker identify as IEN - 8958

SPEED UP HAMMER AND TOOL OPERATIONS

Uses 6.5 cubic feet of air per minute at 80 p.s.i. Delivers from 0 to 13,000 completely controllable blows per minute as a result of Superior's exclusive metering trigger.

38 Tools Available For 150 Different Jobs

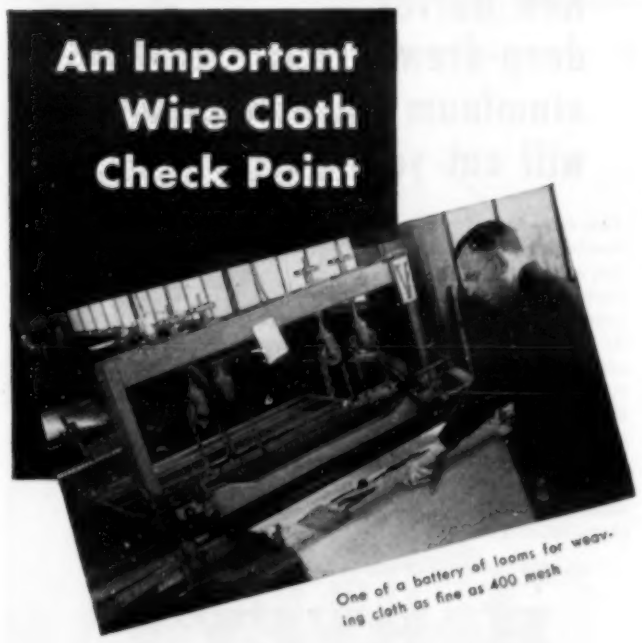
Each tool designed specifically for use with the Bantam Bully. Blank shanks available for new applications in your particular field.

Scaling Tools	Star Drills
Flat Chisels	Sheet Metal Cutters
Routing Chisels	Shear Cutter
Flat Sharp Edge Chisel	Cape Chisel
Flat Long Chisel	Spoon Face Chisels
Peening Tools	Muffler Cutter
Finishing and Forming Tools	Round Hose Hollow Gouges
Wedge Drivers	Wood Working Chisels
Oil Grooving Chisel	Wood Gouge

Write for further information to

SUPERIOR Pneumatic & Manufacturing, Inc.
4758 WARNER ROAD • CLEVELAND 25, OHIO

If you write maker identify as IEN - 8959



One of a battery of looms for weaving cloth as fine as 400 mesh

Weaving Precision

Our skilled workmen and precision looms combine to make precision wire cloth that meets the most rigid specifications. All shute wires are parallel and all warp wires are parallel as they must be, to assure a uniformly woven cloth with no defects. One or two open spots in a wire cloth could completely spoil the most painstaking screening operation.

In addition to its uniformity and freedom from imperfections, Newark Wire Cloth is noted for accurate mesh counts. Available in all the commercially used metals, Newark Wire Cloth is woven in sizes ranging from 4 inches (space cloth) down to 400 mesh.

We maintain a large stock of the commonly used metals and sizes, and are in a position to make prompt shipments. Let us quote on your requirements. When writing, please give us details on your process.

Send for our New Catalog E.

NEWARK for ACCURACY

Newark Wire Cloth COMPANY
351 VERONA AVENUE • NEWARK 4, NEW JERSEY

If you write maker identify as IEN - 8961

Grinding - Bench type machine, 7 in. wheels and illuminated guards

Source: ROCKWELL MFG. COMPANY
624 N. Lexington Ave. Dept. IEN, Pittsburgh 21, Pa.

Adjustable tool rests

New design in the company's Delta grinding machine line includes dual-voltage single-phase assemblies for operation on 110 or 220-volt input and three-phase designs for 220 or 440 volts. The single-phase assemblies employ a capacitor start motor. The company also is prepared to supply a 550-volt three-phase model.

Motor end frames are designed to provide ample clearance on both sides of the wheel. Wheel guards mount shields equipped with safety glass and shielded bayonet type lamps to illuminate both sides of each wheel without shadows. Adjustable spark guards are standard equipment. Fan action of the wheel pulls dust and sparks to discharge both through a tube at the rear on each side.

If you write maker identify as IEN - 8962

Hose - Reprene-rayon construction for fluids other than lacquer or steam

Source: REPUBLIC RUBBER DIVISION
Albert St., Dept. IEN, Youngstown 1, Ohio

Specifications upon request

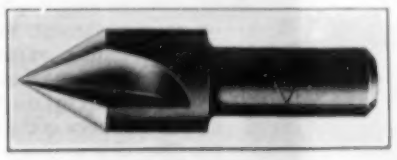
Conductall trade names a new hose available in bore sizes from $\frac{3}{16}$ to 1½ in. for general plant use. The hose is suited for handling air, acetylene, grease, gasoline, kerosene, dilute chemical and acid solutions, oxygen, water, oil. It is particularly intended for use with air operated tools, for welding and cutting, for agricultural spraying and for use in service stations. It is not recommended to handle lacquer, lacquer solvents or steam.

Reprene, oil resistant compound, is employed in the tube and cover. The carcass is reinforced with braided rayon cords. The lead press cured black cover is molded smooth.

If you write maker identify as IEN - 8963

Countersinking - Steel cutter for 60 to 120 deg. included angles

Source: WHITMAN & BARNES
40600 Plymouth Road, Dept. IEN, Plymouth, Mich.



Carried in stock

High speed center reamers or countersinks, with 90, 100, 110 and 120-deg. included angle, are now available in the company's regular line which previously included 60 and 82-deg. units. Sizes are ¼ to ¾-in. diameter in ⅛-in. steps. The 60 and 82-deg. units are available also in sets in both high speed and carbon steel.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8964

A "PEN" MICROSCOPE at work in quality control at Bridgeport-Lycoming

Quality control work at the Bridgeport-Lycoming Division of Avco, manufacturers of aircraft engines and jet engine components, is one of the many applications which leading industrial companies have found for the Pike Model V "Pen" Microscope — the instrument that's no larger than a fountain pen — yet gives magnifications of 40x, 50x or 60x. Ruggedly made and easy to use — yet built with the optical precision of a laboratory microscope.

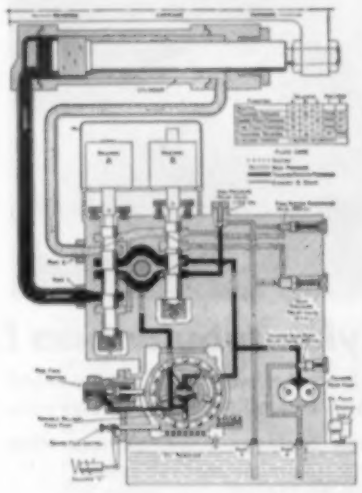
Ideal for on-the-spot examination of specimens — eliminates time-consuming techniques. Self-illuminating by means of mirror that reflects external light source. Price $15.75.

Write for literature on Pike "Pen" Microscopes and FLASH-O-LENS models combining magnifiers and self-contained light sources

E. W. PIKE & COMPANY
492 NORTH AVENUE ELIZABETH 3, NEW JERSEY

If you write maker identify as IEN - 8965

ANY-FEED Oilgear Power Unit



For machine tool and other straight-line feeds

An amazing little fluid power feed pump for practically any machine tool or straight-line feed installation you can think of. It embodies the *Any-Feed* Oilgear Fluid Power unit with a 20:1 range and rapid traverse as high as 265:1 over feed rate. It provides undeviating precision day in and day out once the feed rate is set.

It installs *into* your assembly easily, or mounts nearby or remotely. Yet control of the many possible functions is found in the electric pushbutton station; or partial or completely automatic operation is available. It affords complete operating safety for all action is instantly neutralized in case of accident. All parts are completely and easily accessible. The design is simple; you mount, connect two pipes and control wires. Write for descriptive Bulletin 44200 now while you think of it. THE OILGEAR COMPANY, 1567 West Pierce Street, Milwaukee 4, Wisconsin

If you write maker identify as IEN - 8966

The combination of three RAMSET JOBMASTER tools and 65 Tru-Set fasteners, in 6 types, offers speed and versatility for fastening into steel and concrete not available by any other method.

For light-duty work, set ¼" fasteners with the JOBMASTER. If you need ⅜" pins or studs, attach the PLUS-POWER assembly. For heavy-duty work, turn to the SUPER-POWER JOBMASTER, which sets ⅜" fasteners into the hardest concrete or into steel up to 1" thick.

Whichever JOBMASTER you use, you can be sure of fast, easy, dependable operation that gives you the utmost in economy and utility. Ask your RAMSET dealer or write us for new *Specification Manual.*

Ramset Fasteners, INC. RAMSET DIVISION OLIN INDUSTRIES INC.
12143 BEREA ROAD • CLEVELAND 11, OHIO
FIRST IN POWDER-ACTUATED FASTENING — An Olin Product

If you write maker identify as IEN - 8967

IF YOU USE INDUSTRIAL FABRICS OR TAPES

You Should Have These

FLIGHTEX

FLIGHTEX FABRIC

SWATCH BOOKS

Our staff of engineers is at your service to help solve your fabric and tape problems.

☐ GLASS ☐ COTTON
☐ VINYON ☐ DYNEL
☐ ORLON

Please send the swatch books checked.

NAME .....
FIRM .....
ADDRESS .....
CITY ..... STATE .....

FLIGHTEX FABRICS, INC.
91 WORTH STREET
New York 13, N. Y.

If you write maker identify as IEN - 8968

POLYPENCO® NYLON SHAPES

Save with nylon tubular bars!

- Get nylon's advantages economically in gears and rollers by making outer sections from tubular bars.
- Make bearings, bushings, packings, and other wear parts with minimum waste of nylon.
- Use metalworking tools . . . and high tooling cost.
- Sizes from 2" to 10" O.D. with ⅜" to 1½" walls.
- Uniform high quality . . . technical help.

SEND FOR NEW BULLETIN ON NYLON SHAPES

The POLYMER CORPORATION of Penna. • Reading, Penna.
In Canada: Polypenco, Inc., 2052 St. Catherine W., Montreal, P.Q.

POLYPENCO® NYLON
... teflon* and other non-metallics

Stocks: Reading • Chicago • Los Angeles • Newton (Mass.) • Branford (Conn.)
*trademark for DuPont tetrafluoroethylene resin

If you write maker identify as IEN - 8969

NOW... get new, reinforced

NU-TEX
DEPRESSED CENTER
DISK WHEELS

FOR FASTER, SMOOTHER CUTTING, roughing and grinding. Special, built-in resiliency provides smooth, cushioned cutting action . . . reduces bouncing . . . holds wheel in close contact with work. Cushioned action distributes pressure evenly . . . makes every inch of surface travel an inch of productive cutting . . . speeds up work with either portable or bench-type grinders.

FOR LONGER LIFE . . . LESS DOWNTIME. Bonded together with an extremely tough resin for added durability. Textile reinforcement provides maximum on-the-job safety . . . extra protection against breakage . . . longer life under continuous operation.

FOR A WIDE SELECTION . . . PROMPT SERVICE. Nu-Tex Depressed Center and Straight Disk Wheels are now available in popular diameters and thicknesses for all types of finishing. Grades range from 0 (hard) to 6 (soft). Write for complete details. Atlantic Abrasive Corp. 502 Pearl Street, South Braintree 85, Mass.

ATLANTIC ABRASIVE CORP.
South Braintree 85, Massachusetts

If you write maker identify as IEN - 8970

This torque tool leads a
DOUBLE LIFE

FIRST it's a torque screw driver

THEN it's a torque wrench!

This scientifically accurate Apco torque tool does double duty. You can use it for driving screws where tension must be measured accurately. Then, remove the bit . . . substitute a socket, and presto — it becomes a vertical torque wrench that can be used to tighten nuts up to 100 inch pounds. Available in 13 size ranges — in inch grams; inch ounces; and inch pounds.

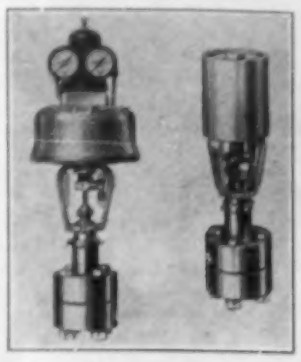
Here's your chance to save money . . . with two tools in one! This minutely accurate torque tool is made with the same care that characterizes all Apco Mossberg Torque Tools. Send for complete facts. Apco Mossberg Company, 171 Lamb Street, Attleboro, Mass.

APCO MOSSBERG COMPANY
ATTLEBORO, MASS.

If you write maker identify as IEN - 8971

Valve - Line control unit, pressure to 6,000 lb., ½ and ¾ inch

Source: ANNIN COMPANY
6570 E. Telegraph, Dept. IEN, Los Angeles 22, Calif.



Data Sheet No. 12

Illustrated is Model 3460 mounting the company's Dumotor and Model 3420 with an operating pressure cylinder. The new valve is also available in a manually operated Model No. 34. Sizes are ½ and ¾ in. in a selection of body and trim materials in offset globe and angle bodies for pressure to 6,000 lb. and temperature to 900 deg. F.

Connections can be supplied for threading, butt welding, socket welding or seal welded high pressure tubing adapter. Materials can be specified in carbon or stainless steel for the valve body. Body bolting is carbon steel, stainless steel or other corrosion resistant alloy.

If you write maker identify as IEN - 8972

Lighting - Lamp starters for fluorescent fixtures, three types

Source: AMPLEX CORPORATION
111 Water St., Dept. IEN, Brooklyn 1, N. Y.

Form A-321

Utility, push button reset, automatic reset, are three new types of fluorescent lamp starters to control preheating, provide precision timing and rapid start. All three carry UL and ETL endorsement.

The automatic and push button units both reset instantly and act automatically to cut out a fatigued or defective lamp. The automatic unit resets itself on replacement of a burned out lamp. The push button unit is reset by pressing a button at the end of the starter housing.

If you write maker identify as IEN - 8973

Photoelectric equipment, actuating predetermined electronic counters, is employed on the Hufford stretch forming machine to keep track of the movement of the stretching rams and to stop them when a predetermined stroke has been counted. The new arrangement is available on machines now in the field as well as on new assemblies. It prevents over and under stretching due to variations in work hardness. Ask Hufford Machine Works, Inc., 2201 Carmelina Ave., Dept. IEN, Los Angeles 64, Calif., for details.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8974

ELECTRAN

Multi-Purpose Step-Down TRANSFORMERS

. . . one transformer or a HUNDRED

Same day delivery from our stock. From 0.1 to 5.0 K.V.A. Ten standard types plus special variations to meet your specific conditions. A transformer you can depend on from a maker you can depend on!

(We have never yet been notified of a field failure of any of these units unless overloaded or otherwise incorrectly used.)

Write for bulletin 47C

ELECTRAN MFG. CO.
1901 CLYBOURN AVENUE • CHICAGO 14, ILLINOIS

If you write maker identify as IEN - 8975

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds

Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements. 4472

WITTEK Reel Stands
Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

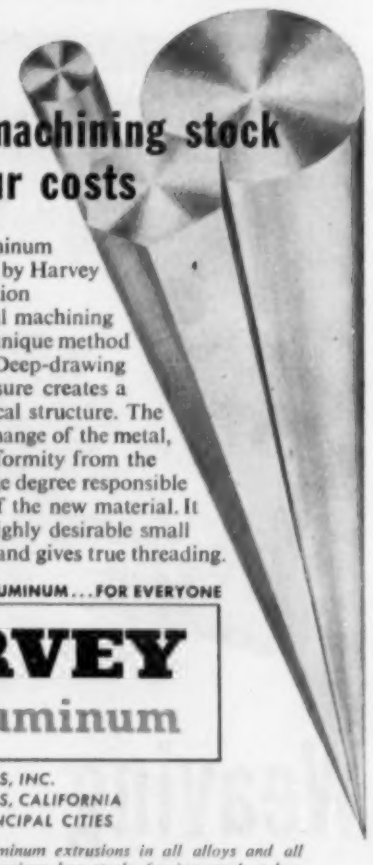
Write for full particulars

WITTEK Manufacturing Co.
4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

If you write maker identify as IEN - 8976

New Harvey deep-drawn aluminum machining stock will cut your costs



This new deep-drawn aluminum machining stock developed by Harvey has acquired peak production characteristics for the metal machining industry by means of the unique method by which it is "worked". Deep-drawing under extremely high pressure creates a completely new metallurgical structure. The resulting macrostructure change of the metal, giving high, consistent uniformity from the outside to core, is to a large degree responsible for the fine machinability of the new material. It allows fast cutting with highly desirable small chips, yet extends tool life, and gives true threading.

MAKING THE MOST OF ALUMINUM . . . FOR EVERYONE

HARVEY Aluminum

HARVEY ALUMINUM SALES, INC.
TORRANCE—LOS ANGELES, CALIFORNIA
BRANCH OFFICES IN PRINCIPAL CITIES

An independent producer of aluminum extrusions in all alloys and all sizes: special extrusions, press forgings, bar stock, forging stock, tubes, impact extrusions, aluminum screw machine products and related products.

If you write maker identify as IEN - 8977

The All New MOBILIFT 4000 Pounder

Has Everything You Want in a "Sit-Down" FORK LIFT TRUCK

MODEL D-424
4,000 lbs. capacity
at 24" Load Center
83" hydraulic mast
lift height 108"

Check these trend-setting features . . .

- CHRYSLER 65-bhp 6 cyl. GAS ENGINE.
- CHRYSLER GYROL FLUID COUPLING.
- MOBILIFT CONSTANT-MESH TRANSMISSION with a Push-Pull Lev-R-Matic Control for forward and reverse —No Clutch Pedal—No Gears to Shift—2 speeds forward, 2 reverse
- MOBILIFT FULL-FLOATING DRIVE AXLE.
- BALL-BEARING WORM & NUT TYPE STEERING.
- HYDRAULIC BRAKES.
- EASY TO GET ON AND OFF—NO OBSTRUCTIONS.
- FREE ACCESS FROM LEFT OR RIGHT SIDE.
- ONE-PIECE HOOD RAISES FOR EASY SERVICE ACCESSIBILITY.

Write for complete details

LAMSON MOBILIFT CORP.
835 S. E. MAIN STREET, PORTLAND 14, OREGON
2317 W. 18TH, CHICAGO • 730 PATTERSON, E. RUTHERFORD, N. J.
2724 TAYLOR STREET, DALLAS • 2730 SAN PABLO AVE., BERKELEY
1113 SPRING STREET, N.W., ATLANTA

If you write maker identify as IEN - 8978

ONLY
TRI-LOK
OPEN STEEL FLOORING
Gives you all these Service Features!
★ ★ ★
Can be fabricated from a variety of metals

Locked-in Strength
Cross bars are locked in place under 1600 tons pressure. This assures permanent rigidity and a flush top surface.

Clinch-Lock Cross Bars
Bent-over bars lock assemblies into permanent integrated panels.

Self Cleaning
Better than 80% open area assures self cleaning.

FREE CATALOG
Write today for Bulletin QK-1102-4

DRAVO CORPORATION
National Distributor for THE TRI-LOK COMPANY
Dravo Building, Fifth and Liberty Aves., Pittsburgh 22, Pa.

If you write maker identify as IEN - 8979

MARK-TIME
"2000" Bell Timer
a favorite for dependability & economy!

Hundreds of the country's leading manufacturers of ranges, washing machines and similar appliances have standardized on "2000" . . . because no other bell timer gives such rugged dependability at so little cost!

"2000" is perfect for any device or appliance where a clear, resonant bell signal is required at the end of a pre-set, measured time interval.

Durability is built into "2000" . . . its simple, trouble-proof operation has earned its outstanding popularity.

Available with a wide variety of modern dials and knobs. Write today for full details and prices.

SPECIFICATIONS
Standard timing ranges from 60 seconds to 3 hours. Normally supplied with center stud mounting. Other mountings available on request. May be supplied with winding shafts of various types.

Manufactured and sold in Canada by SPERRY GYROSCOPE OTTAWA, Limited 3 Hamilton St., Ottawa, Ontario, Canada

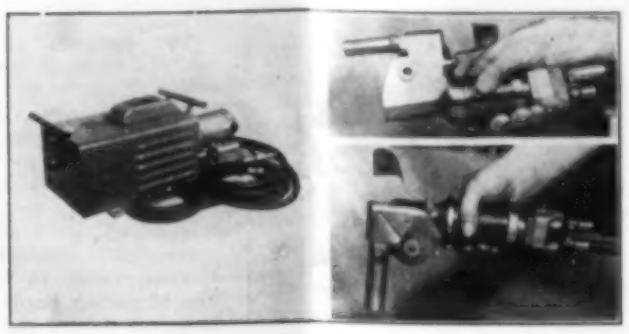
MARK-TIME

M. H. RHODES, INC.
HARTFORD, CONNECTICUT

If you write maker identify as IEN - 8981

Fastening - Hydraulic guns and power unit to set pull type rivets

Source: HUCK MFG. COMPANY
2480 Bellevue Ave., Dept. IEN, Detroit 7, Mich.



For fast pull rivet setting

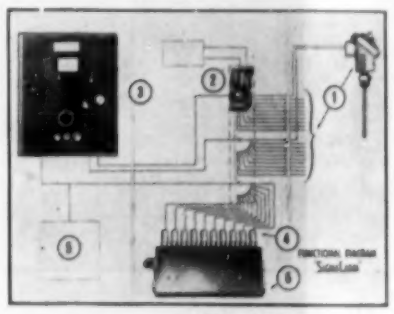
The company has added a Model-126 pull type gun, in both straight and off-set designs, to apply its Huckbolts and blind rivets. It also has developed a Model 127-A motor-driven hydraulic power unit in portable assembly to supply pressure to the guns. The standard gun has a pulling capacity of about 6,750 pounds. The off-set gun rates 6,000 pounds. Working stroke, in both cases, is ⅝ inch. Reciprocating action is at 130 to 150 strokes per minute. Both guns operate on 3,000-lb. hydraulic pressure.

The hydraulic power unit is mounted on a three-wheel portable stand and measures about 35 by 13 by 14 inches. It mounts a 110-volt universal motor ranging from 1 to 7 hp. depending on speed and load. A pressure relief valve is factory set to by-pass oil when pressure reaches 3,000 pounds. Pump capacity is 1.63 gpm. It is a gear-type positive displacement pressure loaded design. It is suited to operate the guns and to supply hydraulic pressure to operate hydraulic work cylinders and broaching equipment.

If you write maker identify as IEN - 8982

Signaling - Temperature monitor indicates condition at multiple points

Source: THERMO ELECTRIC CO.
Saddle River Twnshp., Rochelle Park P. O., N. J.



Bulletin 70

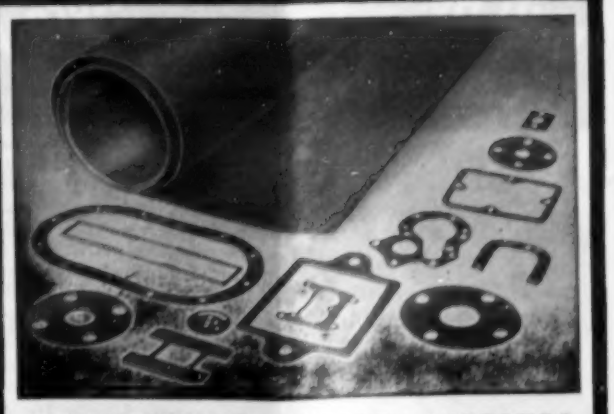
SignaLarm is a new assembly of temperature indicating equipment to include thermocouples or resistance bulbs 1, an impulse timer and stepping switch 2, a master measuring unit 3, a memory relay 4, an audible alarm 5 and signal lamps 6. Temperature conditions are indicated at the various points as they are scanned by means of red and green signal lamps located in visible position.

The green light flashes if temperature is normal. The red light indicates a danger point and a bell or buzzer is sounded to emphaize this signal. The alarm can be silenced by pressing a button but the light remains on until temperature returns to normal. Each unit can handle several hundred thermocouples or resistance bulbs.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8983

MELRATH GASKETS



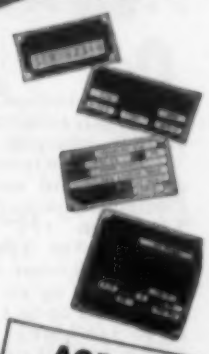
GRAPHITED COMPRESSED ASBESTOS SHEET PACKING and GASKETS
MELRATH No. 125 . . . a high quality long fiber material resistant to acids, oils, steam, chemicals, etc.
Proven for over 30 years.
There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

If you write maker identify as IEN - 8984

How To
Mark Name Plates In 1/5 the Time

Cutting costs in these times is a good trick if you can do it. You can, on plates requiring detail marking, by using an Automark Electric Metal-Marking Typewriter. The operator lightly touches the key and the Automark does the rest, quickly and automatically. No dial to turn—no lever to pull. Marking output is increased five times and worker fatigue is greatly reduced. Write today for Bulletin 8-16.



AUTOMARK
Electric Metal-Marking
TYPEWRITER
Manufactured Exclusively By

AGENTS
Desirable territories open for responsible representatives. Write giving complete information, lines carried and territory covered.

DEFIANCE MACHINE & TOOL COMPANY
1926 South Vandeventer Ave. • St. Louis 10, Mo.

If you write maker identify as IEN - 8985

need permanent buildings in a HURRY?

Just name the space you need. It's yours—almost overnight—in an Armco Steel Building. Clear span interiors range from 4 to 40 feet wide. Lengths are practically unlimited.

Interlocking STEELOX panel construction cuts job-site labor and speeds erection. You are assured an early "move-in" date.

In addition to low first cost, you save on maintenance. Armco Steel Buildings are noncombustible—and there is nothing to warp, rot or crack. You get years of low-cost, trouble-free service.

ARMCO STEEL BUILDINGS

ARMCO DRAINAGE & METAL PRODUCTS, INC.
3124 Curtis Street, Middletown, Ohio

ARMCO

WRITE FOR THE COMPLETE MONEY-SAVING STORY

If you write maker identify as IEN - 8986

AMAZINGLY COMPACT GEARING!

The most frequently cited reason for specifying Cone-Drive gears and speed reducers is "their amazing compactness."

The reason why Cone-Drive gears are so compact is that they are 'double-enveloping'. They thus have more teeth in continuous contact and load per tooth is distributed more evenly over each tooth face.

As a result, smaller gears—up to ⅓ smaller center distances—can be used to carry the loads when Cone-Drive gears are specified.

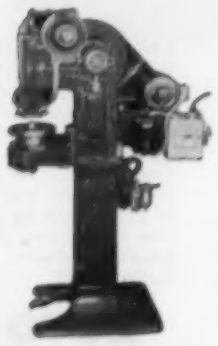
If space saving is one of your design objectives, it will pay you to look into Cone-Drive gears and reducers . . . NOW.

They can be a big help to you and they are available in a wide range of standard sizes and ratios.

CONE-DRIVE GEARS
Division Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS

If you write maker identify as IEN - 8987

Speed Production... Automatically with T-J RIVITORS



Boost production . . . save labor in aircraft, automotive, farm machinery, stampings of all kinds . . . with T-J Rivitors! Automatically feed and set solid rivets. Electrically-powered Rivitor sets 1/16" to 1/4" diam. solid rivets up to 7/8" long. Air-powered Rivitor sets aluminum alloy rivets up to 1/4" diam. or steel rivets up to 1/8" diam. and up to 3/4" long. Throat depths 8" to 36". Write for bulletins 646 and 847. The Tomkins-Johnson Co., Jackson, Mich.

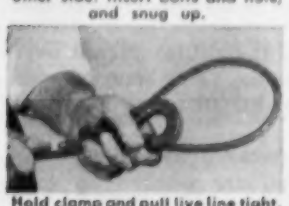
T-J Rivitor used for automotive clutch plate assembly. Does four-fold job—assembling, setting, inspecting, ejecting.

37 YEARS EXPERIENCE T-J
TOMKINS-JOHNSON
RIVITORS AIR AND HYDRAULIC CYLINDERS CUTTERS CLINCHORS

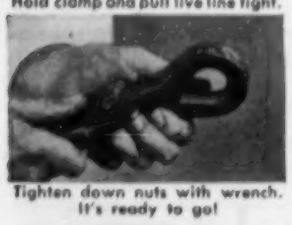
If you write maker identify as IEN - 8988

Easier to Install than Any Other Wire Rope Clip, Grip or Thimble - Newco Wire Rope Clamp

Thread out from one side, into other side. Insert bolts and nuts, and snug up.



Hold clamp and pull live line tight.



Tighten down nuts with wrench. It's ready to go!

The Newco Wire Rope Clamp always goes on right; there is no wrong side. That's why it's so easy to install. The entire assembly consists of two sections, bolts, nuts and *no clips*. No special tools required. Bolts, nuts replaced with standard hardware bolts and nuts. Once it's on, it gives maximum protection to wire rope, lasts two to three times longer than conventional clips and thimbles, reduces down time as much as 2/3. Impossible to shear bolts off. *Develops 95% to 100% of catalog list* for greater safety. Investigate now!

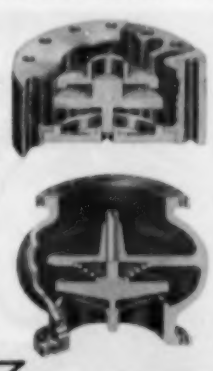
wire rope NEWCO CLAMP

GET ALL THE FACTS! Write today for complete information on the Newco Clamp . . . specifications, details, prices. See your distributor or write direct.

NEWMAN MANUFACTURING & SALES COMPANY
Dept. 101, 205 Westport Road, Kansas City 11, Mo.

If you write maker identify as IEN - 8989

For all Piping systems handling... WATER, OIL, GAS, ACIDS, ALKALIES and other fluids



WILLIAMS-HAGER FLANGED Silent CHECK VALVES

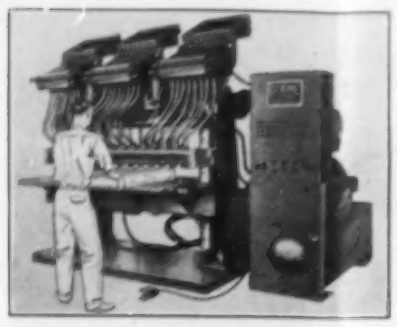
Send today for your copy of Bulletin 654! This bulletin gives complete details on these dependable Williams-Hager check valves and how they eliminate water hammer and other costly and annoying noises in all types of piping systems. Available in sizes for every service. Renewable working parts. Write today.

THE WILLIAMS GAUGE CO., INC.
2900 Pennsylvania Ave., Pittsburgh 33, Pa.

If you write maker identify as IEN - 8990

Nailing - Hydraulic machine for crates, boxes, reels, pallets

Source: G. M. DIEHL MACHINE WORKS INC.
1119 Collins Ave., Dept. IEN, Wabash, Ind.



Drives 2d to 16d nails

The company announces new design of its Hydronic nailing machine in which electronically controlled hydraulic action feeds nails from a series of magazines. Solenoid operated gates lead through flexible tubes to a line of nailing heads. Required nailing patterns can be set by positioning toggle switches on a panel board at the right hand side of the machine. The operator selects pattern sequence as he depresses a foot pedal.

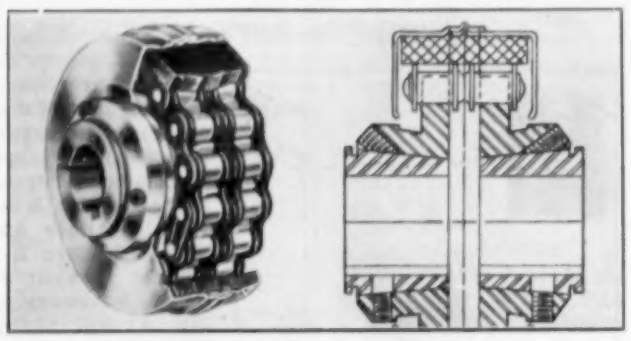
Ten nailing combinations can be set up with a maximum of 24 nails in each operation. Different sizes of nails can be used at one time in a range from 2d to 10d. The machine is available in open and closed back design for work lengths at 40, 48, 60 and 72 inches.

New design includes quick lift hydraulic cylinders to move the chuck carriage from the work on completion of the driving stroke, simple single point adjustments, laminated shims and adjustable bronze wear strips on the hardened ways, new disconnect switches and an overall height limited to 100 in. from the floor to the top. Hydraulic action pushes the nails through the wood and requires no pre-drilling for operation in either soft or hard wood.

If you write maker identify as IEN - 8991

Drive - Flexible shaft coupling with interchangeable tapered bushings

Source: CULLMAN WHEEL CO.
1344 Altgeld St., Dept. IEN, Chicago 14, Ill.



Takes different size shafts

Gripmaster designates a new roller chain design of flexible coupling in which five sizes are stocked with bores ranging from 3/8 to 2 in. in transmission rating maximum at 200 horsepower. The coupling consists of two hardened steel sprockets, a strand of double roller chain, two Gripmaster bushings and a snap on aluminum cover with oil retaining felt. The interchangeable bushings permit application on shafts of varying diameters without need to rebore. The bushings are available from stock with keyways and set screws in place.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8992

Drill Holes within .001" Accuracy with the Master Optical CENTER LOCATOR

Speediest—Simplest—most accurate method of locating centers and drilling holes. For a decade, machinists have been drilling and spacing holes with the Center-Locator to within .001". Just the thing for drilling round holes in thin material . . . avoiding drill run-outs . . . counter-boring holes with an ordinary drill. Makes your drill press do the work of a jig boring machine!

Easy to operate: Simply lay out your work with a height gauge, locate center through the powerful magnifier, then replace the magnifier with any of 16 drill bushings furnished.

38.50 postpaid or from your dealer. Unconditionally guaranteed.

Bulletin on request

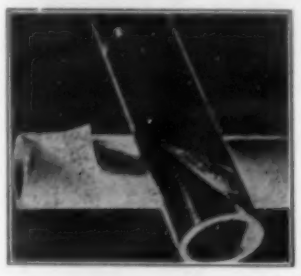
MASTER SPECIALTY CO. INC.
3725 Monitor Avenue
Minneapolis 16, Minnesota

Affiliated with Specialty Products Co.

If you write maker identify as IEN - 8993

Insulating - Fiberglas sections for cold water and low pressure steam

Source: OWENS-CORNING FIBERGLAS CORP.
100 Nicholas Bldg., Dept. IEN, Toledo 1, Ohio



Bulletin INLC7

Fine fibers of glass make up the body of this new insulating material for pipe lines. A canvas covering is employed for installation on hot water lines and lines carrying steam to 300 deg. F. A black asphalt saturated kraft paper cover is supplied to protect against condensation on lines carrying water down to 50 deg. F.

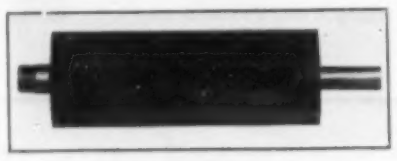
The preformed sections are available in sizes for pipe from 1/2 to 8 in. and copper tube to 3 inches. The sections are 3 ft. in length. Nominal insulation thickness is 1/2 inch.

The glass fibers will not rot or corrode. They will not break down due to weathering or aging, will not shrink, buckle or sag. The insulation is intended primarily for indoor use but can be employed outside after addition of a waterproof jacket.

If you write maker identify as IEN - 8994

Muffler - Exhaust silencer for use on small gasoline engines

Source: MAXIM SILENCER CO.
80 Homestead Ave., Dept. IEN, Hartford 1, Conn.



Will not plug up

Three sizes, for connection to 1/2, 3/4 and 1-in. engine exhaust pipes, are included in the company's new line of miniature exhaust silencers. The unit is designed particularly for small air cooled engines such as those employed on mowers, tractors, snow removers, auxiliary lighting plants. Housing diameter ranges from about 2 5/8 to 4 inches. Housing length is 7 1/4 to 11 1/4 inches. Overall length is 10 5/8 to 17 1/2 inches. Weight is 17 to 44 ounces.

If you write maker identify as IEN - 8995

Lathe Tools - High speed blades with ground finish for cut off duty

Source: ARMSTRONG BROS. TOOL CO.
5200 W. Armstrong Ave., Dept. IEN, Chicago 30, Ill.

Bevel ground sides

Eight sizes, measuring 1/2 by 1/2 by 4 1/2 in. to 1/4 by 1 3/8 by 7 in., are included in a new line of high speed steel cut off blades. Each blade is ground on its four sides. Two series in the line are available for straight or right hand offset tools and for left hand offset tools.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 8996

USE THE Nissen METAL MARKER

TO MAKE ENDURING MARKS ON METAL, WOOD, GLASS, PLASTIC- Smooth OR ROUGH SURFACES

The Nissen Metal Marker is a handy, easy-to-use, ball point writing tube. The special, fast drying ink in the 6" x 1" tube withstands heat and weathering and will not chip, fade, peel or rub off in general use.

$1.00 per tube

Available in seven standard colors.

JOHN P. NISSEN, JR., CO.
manufacturers
GLENSIDE, PA.

If you write maker identify as IEN - 8997

Milling - Vertical machine for hand feed, 9½ by 36 in. table

Source: U. S. BURKE MACHINE TOOL DIVISION
Brotherton Road, Dept. IEN, Cincinnati 27, Ohio

Bulletin, U. S. Vertical

The spindle in this new U. S. Vertical machine rides in sealed factory lubricated precision ball bearings in a 3¼ by 9-in. quill. Drive is by a belt connected 1,200-rpm. 1-hp. motor with reversing control. Motor and spindle carry six-step sheaves for speeds between 250 and 2,850 rpm.

The quill rides in a head mounted on an overarm measuring 4 in. in diameter. It permits moving the head through 7 in. toward or away from the machine column. The overarm also is graduated in degrees for positioning at any angle between horizontal toward either the one end or the other of the table. Quill movement is by two hand wheels, one for rapid advance and the other by means of a worm and worm wheel for controlled feed.

The table has longitudinal hand feed of 24 in. and cross feed of 9¾ inches. Vertical movement is through 16½ inches. The machine weighs about 1,600 pounds.

If you write maker identify as IEN - 8998

Extinguishing - Small hand unit delivers fluid upon pressing a button

Source: UNITED LABORATORIES INC.
16801 Euclid Ave., Dept. IEN, Cleveland 12, Ohio

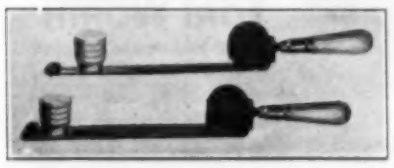
Specifications and prices upon request

New extinguisher is small enough to hold in one hand and is operated at a button on the top of the pressurized container. Pressing this button results in delivery of a stream of extinguishing fluid that will extend from 8 to 10 ft. from the unit. It is intended to extinguish small flash fires within a plant or office and is designed to keep on a work bench, in a desk or at other convenient location ready for use.

If you write maker identify as IEN - 8999

Sanding - Hand operated tool mounts roll of abrasive cloth strip

Source: BONNEY FORGE & TOOL WORKS
721 Meadow St., Dept. IEN, Allentown, Pa.

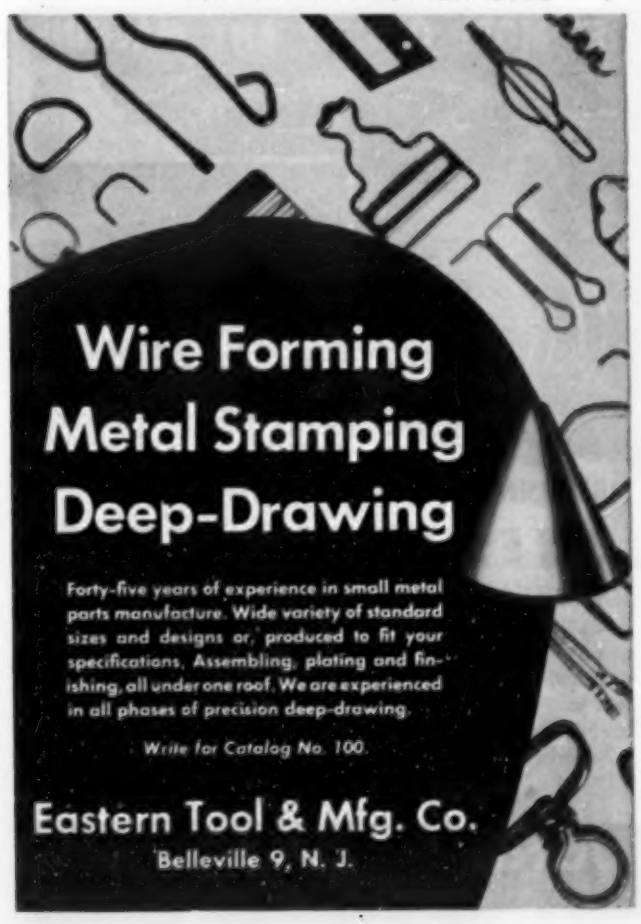


Abrasive File

Abrasive cloth can be fed forward beneath the blade of this new hand tool and gripped at the outer end as it is worn out in service. When the roll of abrasive cloth has been used up, a new one can be applied in the holder at the rear. A handle at the rear and the knob at the front permit two hand operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

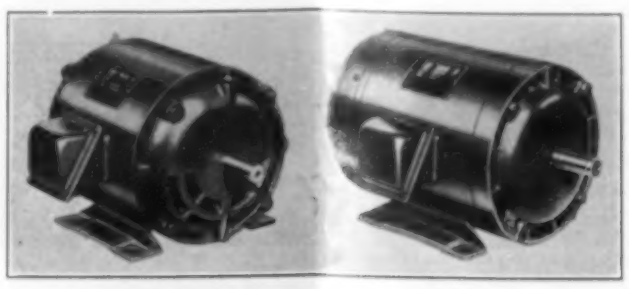
If you write maker identify as IEN - 9000



If you write maker identify as IEN - 9001

Motor - Squirrel cage induction in new NEMA frame sizes 182 and 184

Source: HOWELL ELECTRIC MOTORS CO.
Dept. IEN, Howell, Mich.



Details on request

Series 100 designates a new line of re-rated polyphase ac. motors in 1 to 30-hp. sizes in the new 182 and 184 frame sizes. First motors available are open drip proof design and totally closed fan cooled unit, both are initially available in 1, 1½ and 2 hp. at 1,800 rpm., 1½, 2 and 3 hp. at 3,600 rpm. and ¾, 1, 1½ hp. at 1,200 rpm.

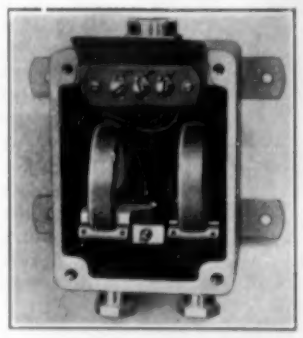
The open drip proof design is equipped with bearing shields to keep out foreign matter and space is available for any standard bearing design. The bearings are locked on the shaft and in the end plate. Inside grease caps are a standard feature.

The totally enclosed fan cooled design retains essentially the same contours as the open motor. The external fan is enclosed in a pressed metal guard. The fan is made of aluminum. Cartridge type bearing enclosures permit disassembly without exposing the bearing itself. The motor is equipped with grease fittings and relief plugs. The company will continue to manufacture its previously developed line of industrial type ac. motors and will make additional sizes of re-rated motors and additional models from time to time.

If you write maker identify as IEN - 9002

Switch - Pressure operated for use in signal and control circuits

Source: BARKSDALE VALVES
5125 Alcoa Ave., Dept. IEN, Los Angeles 58, Calif.



Meletron design

A pair of bourdon tubes is employed to actuate this new Model-532 switch to enable it to sense pressure difference between two variable pressures or a variable and a reference pressure. The switch can be arranged to open or close a circuit on increasing or decreasing pressure differential in an overall range between 15 and 10,000 lb. at any point within the selected range.

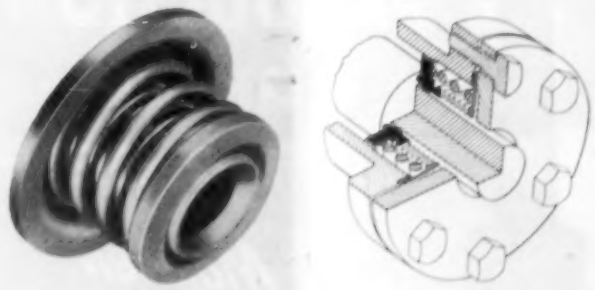
The switch operates in any position. The mechanism is enclosed in a splash proof housing. A tamper proof external adjustment is provided for field setting. The switch element is a snap-acting single pole double throw unit suited for operation of an ac. or dc. signal or control circuit. It carries UL approval. Width between the mounting holes at the rear measures 5⅜ in. from left to right as the unit is shown. Front to back is 4¼ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9003

A PAID NEWS ADVERTISEMENT BY CLIFFORD MANUFACTURING CO.

BELLOWS TYPE SHAFT SEALS



Bellows type seals, having all-metallic construction and certain inherent design advantages, are ideal for sealing shafts operating under severe conditions of high pressure and temperature, corrosion, shock, vibration and misalignment.

In high pressure service, the sealing thrust of the nose piece remains constant and at full value regardless of pressure changes within the system. Power output of the shaft also remains unaffected by pressure changes and no "take-up" is required for the life of the seal.

All-metallic construction makes bellows seals highly effective over the extreme temperature ranges encountered in aircraft and military applications.

Shock, vibration and misalignment problems are frequently overcome by these seals since bellows are inherently flexible. With a back-up spring incorporated in the design, they are ideal for heavy duty sealing on torque converter shafts of trucks, military tanks and other heavy equipment operating under severe load.

Data Sheet 860-1 gives full details. Offered free by Clifford Manufacturing Company, 146 Grove Street, Waltham 54, Mass. *Division of Standard Thomson Corporation.* Sales offices: New York, Detroit, Chicago, Los Angeles, Waltham, Mass. 7.4.25

If you write maker identify as IEN - 9004

If you write maker identify as IEN - 9005

SAVE TIME—STEPS—MATERIALS with HANSEN ONE-HAND TACKER

Hansen Model T-4 fastening screens in radio-phono-TV

TAKE HANSEN TACKERS TO THE JOB! Hold materials with one hand. Tack them with the other. Fast operation — flexibility in use — easy portability — are combined in Hansen balanced-design. Self-contained for instant use.

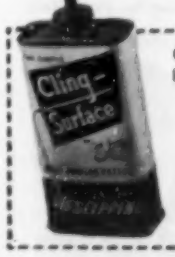
Screens in radio-phono-TV — rubber dies to printer-slotter — plywood — insulation — metal lath — door and window screens — a few of thousands of every-day Hansen-tacked jobs.

A. L. HANSEN MFG. CO. REQUEST BOOKLET
5051 RAVENSWOOD AVENUE, CHICAGO 40, ILL.

If you write maker identify as IEN - 9006

FREE SAMPLE

- Makes and keeps belts soft and pliable
- Pliable belt "clings" to "surface" of pulley
- Dissolves hard "glaze" that makes belts slip
- Only belt preservative that has met and passed U. S. Government Tests and Requirements
- Sold with money-back guarantee since 1896



CLING-SURFACE CO., 1044 Niagara St., Buffalo, N. Y.
In Canada: Write CLING-SURFACE CO., Toronto 2, Ont.

Please send me FREE sample can of Cling-Surface "50" Belt Preservative

Name .....
Title .....
Company .....
City ..... State .....

If you write maker identify as IEN - 9007

SURE SIGN
of bearing knowledge

When it's a question of bearing *replacement*, pick up your phone and call your SKF Distributor.

He has the *knowledge* to give you the right bearing—the one that'll get you going again and keep you that way.

Every SKF Distributor Salesman gets a continuing course in the care and application of anti-friction bearings, plus a continuing series of educational films which assure *you* that the man you call has the knowledge you expect.

SKF INDUSTRIES, INC., PHILA. 32, PA.—*manufacturers of* **SKF** *and* HESS-BRIGHT *bearings.*

SKF®
BALL AND ROLLER BEARINGS

If you write maker identify as IEN - 9008

PANGBORN BLASTS *by don herold*

COST-CUTTING STORY OF THE PANGBORN BLAST CLEANING MACHINE

Pangborn Blast Cleaning Machine—available in six types, stationary or portable—delivers efficient, low-cost maintenance in any plant. $188 and up. For details, write: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Md.

Pangborn BLAST CLEANS CHEAPER
with the right equipment for every job

50th Anniversary Medallion

If you write maker identify as IEN - 9010

Painting - Resin base liquid protects and decorates masonry surface

Source: VIMASCO CORPORATION
Box 4063, Station A, Dept. IEN, Charleston, W. Va.

Illustrating application on cinder blocks

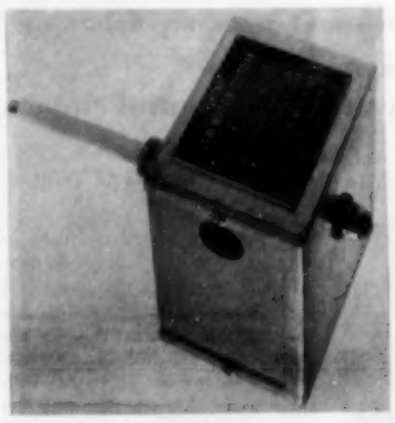
New paint has been developed by the company in white, black, aluminum and 20 colors, based on Bakelite vinyl resin base. The film dries in about 30 min. to form a tough, smooth and resilient skin that adheres tightly to concrete, brick, cinder block, plaster as well as to asbestos shingles or steel surfaces. The paint withstands attack by weathering and abrasion. It resists moisture and will not chip or peel.

Application on building block follows a cement wash. The first coat, applied by spray, brush or roller, flows into and seals the cracks and pores. A second coat finishes the job, dries to a lustrous sheen to which dirt will not adhere readily.

If you write maker identify as IEN - 9011

Control - Magnetic equipment actuates circuit to hold liquid level

Source: VIKING INSTRUMENTS INC.
Towne St., Dept. IEN, East Haddam, Conn.



Maintenance free

Stainless steel probe forming the level sensitive element in this new magnetic liquid level control equipment is assembled through a ½-in. threaded hole in a wall or surface of a tank, pressure vessel, boiler. The equipment connects to a control circuit to regulate conductive liquids. It employs a relay for the load circuit and is suited for operation in liquid temperature to 600 deg. F. Pressure is maximum at 500 pounds. Ambient temperature range is from 0 to 150 deg. F.

If you write maker identify as IEN - 9012

Thinplates trade names a new plate made of 0.003 or 0.005-in. anodized aluminum backed by a pressure sensitive adhesive. The plate is available from Park Nameplate Co., 61-07 32nd Ave., Dept. IEN, Woodside 77, N. Y. Anodized colors will not tarnish or oxidize and will resist attack by abrasion, humidity, salt spray. You can specify size and printed or diagramed data.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9013

PRODUCTION BORING with E-Z SET *by Maxwell*

Only the **MAXWELL E-Z Set** boring tools feature **high speed operation, micrometer-like adjustment** to 0.0001-inch and **maximum boring range.**

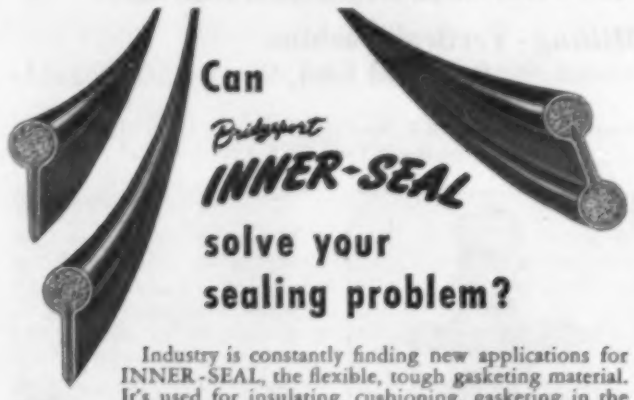
Interchangeable shanks permit E-Z Set boring tools to be used in turret lathe, jig-bore, milling machine, boring mill, automatic or other machine tools. Because they can be adjusted for cut in only one-tenth the time formerly required by similar tools, these Maxwell-made tools can meet high-speed production on schedules.

E-Z Set boring tools are available in three models having maximum boring bar capacities of ½, 1 and 1½ inches and covering a boring range of from ⅜ to 20 inches.

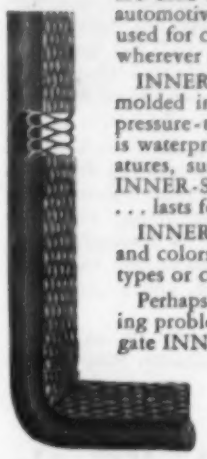
Write today for catalog.

THE MAXWELL COMPANY
391 Broadway • Bedford, Ohio

If you write maker identify as IEN - 9014



Can Bridgeport INNER-SEAL solve your sealing problem?



Industry is constantly finding new applications for INNER-SEAL, the flexible, tough gasketing material. It's used for insulating, cushioning, gasketing in the automotive, railway and refrigeration fields. It's also used for countless other purposes in manufacturing—wherever sealing problems occur.

INNER-SEAL's patented construction—spring steel molded in live sponge rubber—makes an effective, pressure-tight seal. Neoprene coated INNER-SEAL is waterproof . . . resists sub-zero and tropic temperatures, sunlight, humidity, grease, oil and abrasion. INNER-SEAL fits perfectly into corners, around curves . . . lasts for years.

INNER-SEAL is stocked in standard dimensions and colors. Heavy-duty type available in black. Special types or colors made to order.

Perhaps INNER-SEAL can help you solve your sealing problem—and make *your* product better! Investigate INNER-SEAL!

Write today for **FREE SAMPLES** *and complete information.*

BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

If you write maker identify as IEN - 9015

ANYWAY YOU LOOK AT IT.. FORT WORTH Hi-Cap *High-Speed* Elevator Buckets

GIVE
GREATER CAPACITY LONGER LIFE

Made of HEAVY GAUGE STEEL—

All Welded No Rivets

FORT WORTH

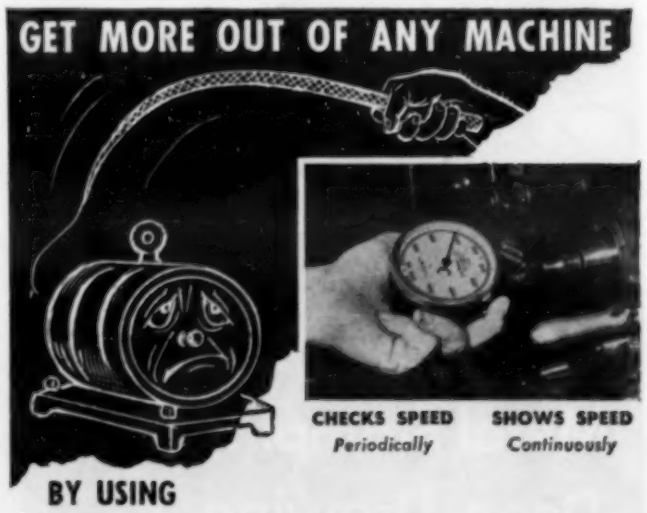
HI-CAP buckets are designed for high-speed elevators, although they may be used for replacements in old elevators where increased capacity is required. They are suitable for use in either chain or belt elevators and will discharge properly at high or medium belt speeds. They may be spaced on very close centers, or continuous.

WRITE FOR CATALOG SECTION 416

FORT WORTH STEEL & MACHINERY CO.
DEPT. 28 • 3600 McCART, FORT WORTH, TEXAS
FORT WORTH WAREHOUSES: • CHICAGO • ATLANTA • ST. LOUIS • JERSEY CITY • KANSAS CITY • LOS ANGELES • SAN FRANCISCO • MEMPHIS • HOUSTON

If you write maker identify as IEN - 9016

GET MORE OUT OF ANY MACHINE



CHECKS SPEED *Periodically* **SHOWS SPEED** *Continuously*

BY USING
JONES TACHOMETERS

How can you get the most from your machinery without sacrificing the quality of your product? A Jones TACHOMETER will give you the answer in RPM's, FPM's, etc. Jones TACHOMETERS are used widely in every type of industry to check and maintain best performance of operating equipment. Both Portable (as illustrated) and permanently installed types are available at surprisingly moderate cost.

• WRITE FOR BULLETIN 146-2 •

JONES MOTROLA CORP.
Stamford, Conn.

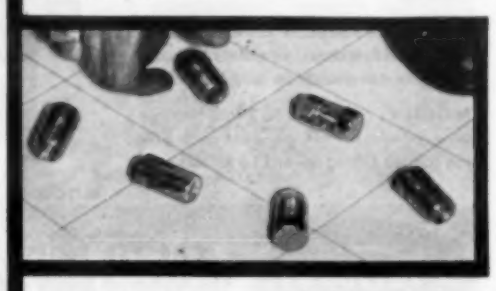
If you write maker identify as IEN - 9017

HOW TO PACKAGE SMALL ITEMS

Safely . . . with Visibility

LOOK INTO LUSTEROID PLASTIC VIALS and TUBES

There's a LUSTEROID plastic container just right for carrying items too small for ordinary packaging. These crystal clear vials and tubes are strong, tough, unbreakable. Save you money, too. No labels to affix because LUSTEROID is printable. Cuts handling and shipping expense because it's so light in weight. Wide choice of colors in clear or opaque in standard diameters from ¼" to 1½" and lengths up to 6". Cork, slip-on and screw-cap closures.



Write for samples and details today.

LUSTEROID CONTAINER COMPANY, INC.
10 West Parker Avenue, Maplewood, N. J.

If you write maker identify as IEN - 9018

WESTCOAT
Peelable Plastic Coating

Absolute Protection from Rust and Abrasion for Tools and Metal Parts

WESTCOAT tough plastic coating completely protects metal parts from rust and abrasion. Protects cutting edges and fine finishes.

Simply dip—coating solidifies in seconds—lasts for years. Easily peeled off—part immediately ready for use.

Special Introductory Offer

One—thermostatically controlled, electrically heated dip tank. One gallon capacity. 115 Volt, 60 cycle.

25 lbs.—WESTCOAT AMBER peelable plastic—enough to cover 10,000 square inches.

Regular Price $74.85

Special Offer price $59.50

F.O.B. Elyria, Ohio
This offer good for limited time only

PROTECT WITH WESTCOAT

Order Special No. 305 today!

Western Coating Co.
P. O. Box 227, Elyria, Ohio
Representatives in principal cities

If you write maker identify as IEN - 9020

Heating - Infra-red lamp, double filament design, to 1,550 watts

Source: SYLVANIA ELECTRIC PRODUCTS INC.
1740 Broadway, Dept. IEN, New York 19, N. Y.

Also dries, bakes

Two **filaments,** rating 650 and 900 watts, are assembled in this new gold reflector lamp. Either or both of the filaments can be made active to project useful heat over an angle of about 120 degrees. The gold reflector maintains its reflectivity, between 90 and 95 per cent of its initial value, throughout its life. Operation is at a maximum of 236 volts.

The base carries three terminals for attachment of Ark-Les quick terminals, No. 3,000I or equivalent. Any collar or clamp that permits some flexibility can be the lamp holder. The bulb measures 6 in. in diameter. Overall length is 7 inches.

If you write maker identify as IEN - 9021

Packaging - Semi-transparent tape self-adhesive, can be printed upon

Source: PERMACEL TAPE CORP.
Highway One, Dept. IEN, New Brunswick, N. J.

Specifications upon request

A **clear film** made of 0.88-mil cellulose acetate is laminated to 2-mil rope paper in construction of this new P992 combination tape. The adhesive is a transparent rubber base pressure sensitive mass on the backing face. The tape can be printed in high speed equipment using oil base or aniline ink. It is processed to present a smooth printing surface.

Average adhesion to steel is 33 oz. per inch of width. Tensile strength is 34 lb. per inch. Elongation is 6 per cent. Thickness is 6.5 mils. The tape is available in widths from ¼ to ⅞ in. by ⅛-in. multiples, in lengths of 72 yd., and from 1 to 4 in. in ¼-in. multiples in the same yardage.

If you write maker identify as IEN - 9022

Layout - Granite surface plate lapped to prevent gage block seizure

Source: COLLINS MICROFLAT CO.
2326 E. 8th St., Dept. IEN, Los Angeles, 21, Calif.

Minute reliefs

Black granite is employed in the manufacture of a new line of surface plates, particularly for layout purposes, in which the surface is lapped so there is no danger of seizure between the plate and gage blocks or checking fixtures positioned on it. The new plate differs from the company's surface plate, previously described IEN-12824-53, in that it does not have clamping edges but is straight sided and is finished to an accuracy of 0.0002 in. per foot. Sizes range from 9 by 12 by 3 in. to 72 by 120 by 10 inches. List price is $30 to $2,100.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9023

Air Valves

MODEL 2100

RIVETT OFFERS 19 models for individual air needs!

You can get the required size and type air valve from Rivett! Suitable for pressures up to 150 P.S.I., Rivett 4-way valves are available in 5 types of operation: hand, foot, cam, solenoid, and pilot. Five sizes: 1/4", 3/8", 1/2", 3/4" and 1". Pilot valves in side and foot mountings—and in palm, push button, cam, foot and solenoid operation.

Write for Catalog Section 505 showing specifications and drawings of Rivett air valves.

RIVETT LATHE & GRINDER INC.
Brighton 35, Boston Mass., Department IEN-8

If you write maker identify as IEN - 9024

LIFTS UP TO 25 TONS

Behind the 25-ton lift capacity of this Koehring 304 Truck Crane are many important features that give you big-tonnage output. On the intermittent usage of clamshell or crane work, there's no time-out for adjusting clutches. Heat-compensator spring automatically makes all tension changes, maintains full clutch efficiency at all times. Koehring booster clutch cuts normal lever pull 50%, retains accurate "feel" of load. Also check: max. 110-ft. boom length with jib, power boom lowering, 30 mph mobility. Other sizes: up to 79½ tons lift capacity.

KOEHRING COMPANY
Milwaukee 16, Wis.

Write for bulletin K373REV.

KOEHRING *Truck Cranes*

If you write maker identify as IEN - 9025

Conversion from Copper to ALCUPLATE® can Reduce Your Cost up to 30%

What is ALCUPLATE?
ALCUPLATE is a solid layer of copper permanently clad on one side or both sides of less expensive aluminum.
This gives you solid copper performance at a lower cost over solid copper.
In addition to its lower cost, ALCUPLATE has virtually the same physical and electrical properties as pure copper.
This permits fabrication of many parts and products from ALCUPLATE at savings of from 15%-30% over solid copper.

Can ALCUPLATE be worked?
ALCUPLATE can be fabricated by stamping, drawing, spinning and forming. The copper provides an ideal surface for soft-soldering operations and electroplated or other finishes.

In what sizes is ALCUPLATE stock available?
In coils or flat stock up to 1/16" thick x 13" wide and in a choice of thickness ratios and tempers.

ALCUPLATE FEATURES:
- Natural copper appearance
- High electrical conductivity
- Excellent heat dissipation
- Soft-soldering surfaces
- Easy fabrication
- Light weight

ALCUPLATE®

For further information, write or wire

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
78 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as IEN - 9026

New WILLSON Kover-Mor goggles
with strong, light NYLON eye cups!

Style CW70
For Welders — with Willson Spatterproof® cover glass over Willson-Weld® filter lens

Style CC70
For Chippers — with Willson Super-Tough® lenses heat treated for extra protection

- New design provides ample room for large-frame prescription glasses
- Standard 50 mm. round lenses are easily replaced and quickly inserted
- Extra ventilation is provided by vents and ports safeguarded by screens
- Rigid metal top bar makes goggles easier to handle—more secure

Ask your Willson distributor for new Kover-Mor* Welding Goggles —or write for new Bulletin.

Over 300 safety products carry this famous trademark

WILLSON®
Established 1870

*Trademark

WILLSON PRODUCTS, INC., 217 Washington Street, Reading, Penna.

If you write maker identify as IEN - 9027

DESPATCH BURN-OFF OVEN

Saves 52 hours in ONE operation!

Typical process load of stators at Am. Electrical & Maintenance Company, Philadelphia. According to this company, "Stator frames, due to complete burning, give the appearance of new motors and result in compliments from our customers."

FOR ALL SHOPS THAT MANUFACTURE OR REPAIR MOTORS

● **YEARS OF RESEARCH** and coordination with motor manufacturers have resulted in this thoroughly proven Burn-Off Oven design. Here you have faster motor stripping at a minimum of expense. Extra-heavy construction combines with complete, controlled heat distribution for economical performance every day. RCS-5 Oven 24" x 36" x 48"; RCS-6 Oven 48" x 60" x 66". Gas fired.

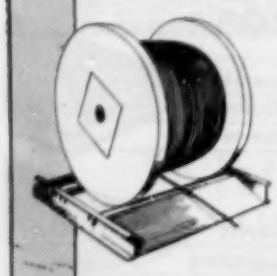
Write for RCS Bulletin

DESPATCH Established OVEN CO. in 1902

DESPATCH OVEN COMPANY
337 Despatch Bldg.
Minneapolis 14, Minn.

If you write maker identify as IEN - 9028

Simple as A B C



Handle heavy reels easily and safely; remove wire or cable from top or bottom, front or back of reel with

ROLL-A-REEL

Low slanted front and positive front lock insure quick loading or unloading.

Eliminate jacks and cumbersome handling.

Style A: 2,000 lbs. cap. 37.50
Style B: 4,000 lbs. cap. 75.00
f.o.b. Cincinnati

Carried easily to reels, job or storage.
Sold through wholesalers only.

WRITE FOR DETAILS

ROLL-A-REEL

3100 SYCAMORE AT CENTRAL PARKWAY
CINCINNATI 2, OHIO

If you write maker identify as IEN - 9029

To CUT KEYWAY CUTTING COST...
Cut this Coupon

du MONT *Minute Man* KEYWAY BROACH KITS and an arbor press are all you need to cut any keyway from 1/16" to 1" in any bore from 1/4" to 3" — *by hand, in one minute* for as little as *one cent* per keyway

The du MONT CORPORATION, Greenfield, Mass.

MAIL FREE KEYWAY BROACH CATALOG and PRICE LIST N to

Name .....

Company .....

Address .....

If you write maker identify as IEN - 9030

Crane - Portable power hydraulic has 1 ton load rating on 4 ft. boom

Source: UNIT MFG. COMPANY
1229 Harmon Place, Dept. IEN, Minneapolis 3, Minn.

Push button control

Storage battery, rating 6 volts, provides power for an electric motor driving a hydraulic pump in this new Utility portable crane. The pump develops pressure at 5,000 lb. for the load cylinder that raises and lowers the hinged boom. The crane rates a 1 ton load with the boom set at a 4-ft. length. It will handle a ½-ton load when the boom is extended to 8 ft. for additional reach.

The upright supporting the boom and the hydraulic equipment is "stepped" into a socket on the 4 wheel tubular frame truck. It can be lifted from this socket and placed in a similar socket located in a truck bed or on a loading platform for stationary application. The complete assembly lists at $510. The unit without the truck lists at $415.

If you write maker identify as IEN - 9031

Extinguishing - Pressurized unit for use on electric and liquid fires

Source: PYRENE MFG. COMPANY
560 Belmont Ave., Dept. IEN, Newark 8, N. J.

For quick action

Pyrene liquid is held in an outer stainless steel chamber in this new 2-qt. Type-VL extinguisher. Compressed air is introduced into an inner chamber from a shop pressure source. The extinguisher is equipped with bronze head and base, both painted red. A liquid level glass port in the top head and an air pressure gage are provided for quick inspection.

Pressure is released to deliver the liquid by operating the squeeze type valve in the handle at the top of the assembly. The extinguisher will deliver a 30-ft. stream to extinguish a Class-C or a Class-B fire. It can be recharged by refilling with the Pyrene liquid and pressurizing again from an air line. A hook is provided to hang the unit on a wall. A clamping bracket can be specified to mount on a vehicle.

If you write maker identify as IEN - 9032

Carb-A-Guide is a new combination of dial and slide chart with which you can determine the correct speed, carbide grade, tool angles and chip breaker dimensions for a given material, feed rate and depth of cut. The unit also includes a speed conversion slide, a milling feed slide and a horsepower computer slide. For $1, Adamas Carbide Corp., Dept. IEN, Kenilworth, N. J., will send you one.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9033

KEEP YOUR PUMPS FIT with the VALVES THAT FIT ALL PUMPS

Old reciprocating pumps can be rehabilitated or adapted to new service by fitting them with DURABLA Pump Valve Units.

The patented, pressed metal valve, making only "point contact" on the sleeve, cannot bind on the guard stem. The open-type guard eliminates any possibility of spring clogging.

Durabla Pump Valves will operate freely under temperature extremes, with corrosives, and in any position. They will handle vacuums of one micron or discharge pressure of thousands of pounds per square inch. They are made in 15 sizes to fit any reciprocating pump, old or new.

DURABLA

Write for bulletin or engineering assistance.

DURABLA MANUFACTURING COMPANY
114 Liberty Street, New York 6, N. Y.
DM-13

If you write maker identify as IEN - 9034

CHESTER *Electric* HOISTS

Make heavy handling jobs easier!

Now, an outstanding new line of Chester Electric Hoists is available to help you put more heavy handling jobs on a paying basis in your plant.

Ask your distributor for complete information on the new Chester Electric Hoists, or write us for specification folders, E 853 and EC 953.

Remember Chester, too, for the complete line of Spur Geared Hand Chain Hoists and Overhead I-Beam Trolleys. ¼ to 25 ton. Ask for Catalog.

MODEL EC: 3 sizes, ¼ to 1 ton. Welded alloy steel link chain, pendent rope control. Lifts adaptable up to 66 ft.

MODEL E: 5 sizes, ¼ to 2 ton. Flexible wire rope-cable lift, pendent push button control. Lifting speeds 15 to 30 f.p.m.

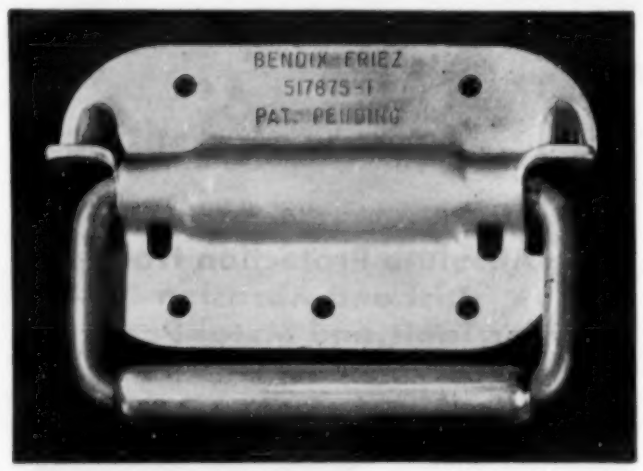
MODEL EC

MODEL E

National PRODUCTS

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio

If you write maker identify as IEN - 9035



WONDERFUL NEW HANDLE

. . . if you sell or ship anything that has to be lifted, this is for you. It meets military requirements for many specialized equipment uses. Count its advantages in the specs below.

This patented Bendix-Friez handle is rust-proof . . rattle-proof and withstands shock and vibration.

It has a positive "snap-back" principle.

Built of stainless steel and aluminum, it can be riveted or welded to any kind of container or depressed in the sides.

What's a large instrument manufacturer doing making handles? We couldn't seem to find one for our own use that pleased us . . . so we made one ourselves.

Manufacturers who saw it and needed a better handle liked it. If you've got something that's got to be lifted by handles . . . chances are this Bendix-Friez handle is for you. Small or large quantity orders. Inquiries answered promptly.

BENDIX FRIEZ

FRIEZ INSTRUMENT
Division of
Bendix
AVIATION CORPORATION
1428 Taylor Ave., Balto. 4, Md.

EXPORT SALES
Bendix International Division
205 E.42nd St., New York 17, N.Y.U.S.A.

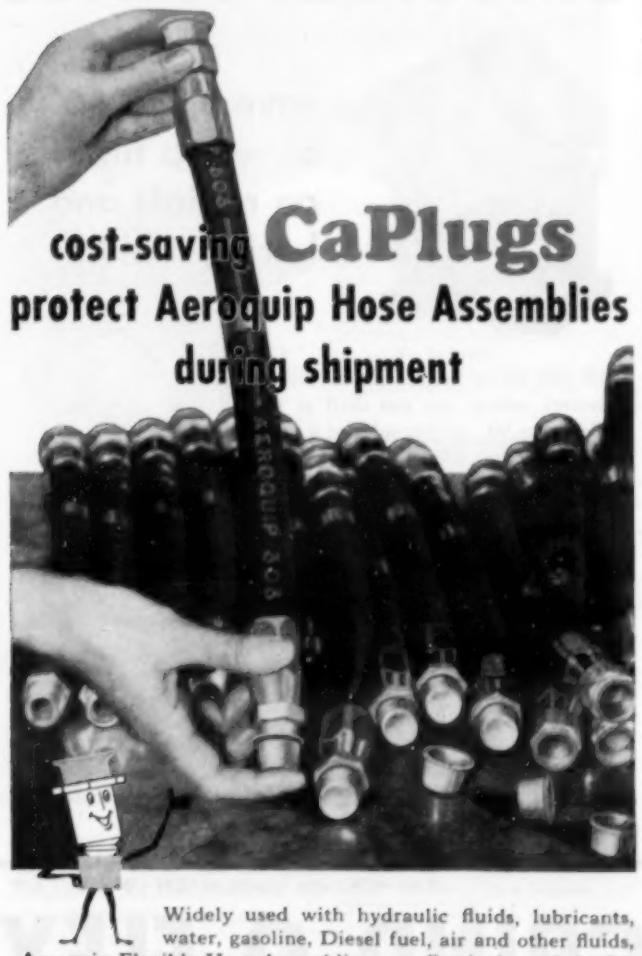
If you write maker identify as IEN - 9037

Where High Humidity— High Temperature are encountered, specify Sarkes Tarzian "Centre-Kooled" rectifier construction. Heavy bakelite core eliminates rectifier-to-chassis shorting. (Ask for information on the conversion Plug-In chassis.) New replacement guide available at your distributor's.

Sarkes Tarzian "Centre-Kooled" SELENIUM RECTIFIERS

Dept. B4, 415 N. College Ave., Bloomington, Ind.
In Canada: 700 Weston Road, Toronto 9—Tel. Murray 7535

If you write maker identify as IEN - 9038



cost-saving CaPlugs protect Aeroquip Hose Assemblies during shipment

Widely used with hydraulic fluids, lubricants, water, gasoline, Diesel fuel, air and other fluids, Aeroquip Flexible Hose Assemblies are effectively sealed with dependable Tapered CaPlugs . . . protecting both male and female end fittings during shipment.

Stressing the fact that, "Every hose assembly is pressure tested before leaving the plant, and the hydraulic fluid remaining in the hose would attract dirt," Aeroquip Corporation states, "CaPlugs are both easy to insert and effective in keeping the interior of the hose free from dust and moisture."

Molded of tough, flexible Polyethylene and impervious to all common chemical reagents, acids and solvents, multi-purpose CaPlugs will not chip, break or shred under most severe conditions. Furnished in five standardized designs, they are stocked in over 100 sizes to meet most requirements.

Write for catalog, price lists and free CaPlug assortment.

CaPlugs
DIVISION
PROTECTIVE CLOSURES CO., INC.
2203-5 ELMWOOD AVE. • BUFFALO 23, N. Y.

TAPERED CAPLUGS — For use as caps or plugs, inside or outside of threaded or plain fittings.

EC SERIES — Thread-protecting dust caps for electrical connectors. Fit over threaded or plain fittings.

CD SERIES — Threaded seal and shipping caps. Knurled for easy of application.

PD SERIES — Threaded Plugs for aircraft and hydraulic tube fittings. Seal beyond ordinary requirements.

NEW SERIES SC SLEEVE CAPS NOW AVAILABLE

If you write maker identify as IEN - 9040

Metal Spraying - Torch and hopper to apply and fuse powdered metals

Source: WALL COLMONOY CORP.
19345 John R St., Dep IEN, Detroit 3, Mich.

Panel mounted

Model C is new design of the company's Spraywelder equipment, previously described IEN-9057-51. It is employed to deliver powdered metals and then to fuse the sprayed coating permanently in place. The equipment is suited for hard facing and also to apply overlays of powdered metal such as aluminum, brass, copper, stainless steel, zinc.

Three hose lines connect to the torch to carry oxygen, acetylene and dry compressed air, the latter at 60 lb. or more. The oxygen and acetylene maintain a flame at the torch tip as in a standard welding torch. The air passes through a trigger controlled valve to issue from the rear of the torch through a hose line to the feeder at the bottom of the powdered metal hopper. Another line from the feeder conveys the powder, suspended in the air stream, back to the torch for delivery through the gas flame in the nozzle. When the powder has been sprayed, its feed is shut off and the torch operation is continued to bond the sprayed metal in place.

Improvements in the new unit include a chromium plated copper hopper and a cast brass feeder. The torch carries a new finned brass head for cooling action. The torch tip and cap have been redesigned to provide for positive seating of the tip on the head. New oxygen and acetylene valves assure accurate flame adjustment. The powder feed tube has been changed from a soldered assembly to a one-piece machined brass tube to provide strength at this point.

If you write maker identify as IEN - 9041

Welding - Auxiliary equipment acts as stabilizer in arc welding

Source: MID-STATES WELDER MFG. COMPANY
6025 S. Ashland Ave., Dept. IEN, Chicago 36, Ill.

Model 13-D

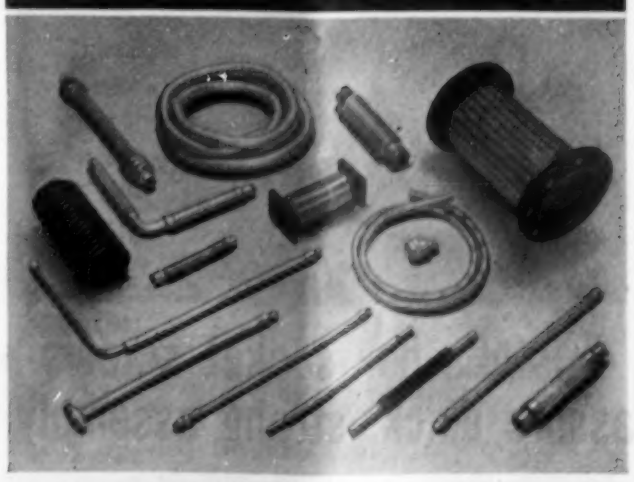
A new circuit that produces a steady arc and does not require an auxiliary switch is employed in this new design of the company's Missing Link equipment, previously described IEN-3259-49. Its application eliminates tendency for radio interference while it is being employed with any type of arc welding.

An arc is started prior to direct contact between the electrode and the work. It is maintained steadily during the welding operation employing ac. or dc. equipment and bare or coated electrodes. Essentially the unit is a spark gap oscillator which supplies high frequency current on which the heavier welding current is impressed. In cases where the equipment is employed on inert gas welding, automatically controlled valves are included for the gas and water supplies to cut them in and out.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9042

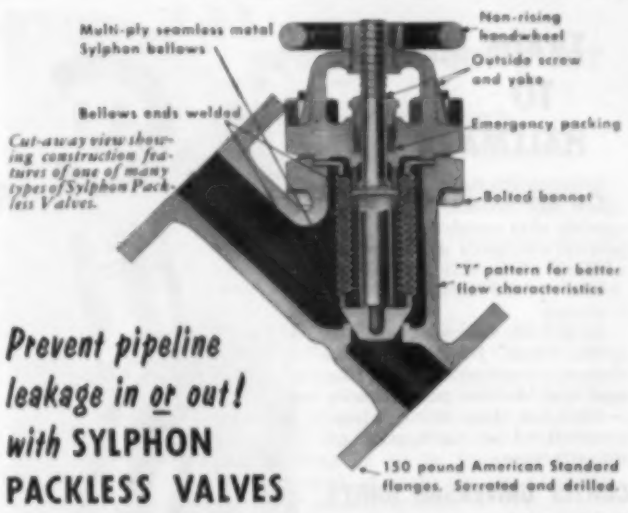
Metal hose variety!



Consult PACKLESS on your flexible metal hose requirements — a complete line stocked for every industrial need — Bronze, Stainless steel and Carbon steel available for high or low temperature usage. Fittings are soldered, brazed, welded, or mechanically applied. Write for industrial folder.

PACKLESS METAL HOSE INC.
31-40 WINTHROP AVE. • NEW ROCHELLE, N. Y.

If you write maker identify as IEN - 9043



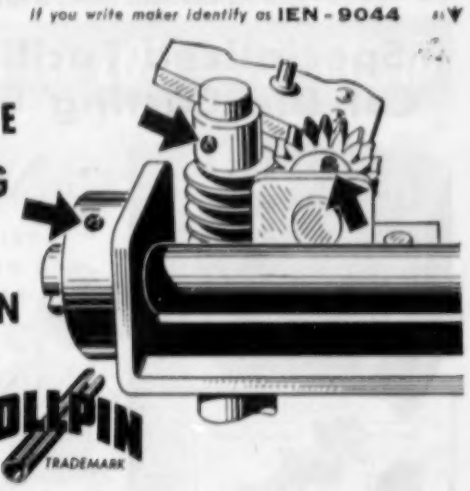
Prevent pipeline leakage in or out! with SYLPHON PACKLESS VALVES

● Wherever pipelines carrying gasoline, oil or other volatile liquids and vapors must have positive protection against leakage, install Sylphon Packless Valves and *forget* leakage! A seamless Sylphon metal bellows replaces customary packing — eliminates leaks that might seep past the stuffing box of the best packed-type valve. Seals valve stem against corrosive or dangerous liquids or gases. Many sizes, types, metals. Used in chemical plants, oil refineries, etc. Write for Bulletin PN-813.

Robertshaw-Fulton CONTROLS COMPANY
FULTON SYLPHON DIVISION • KNOXVILLE 1, TENN.

If you write maker identify as IEN - 9044

FAST, ACCURATE PINNING OF PRECISION SHAFTS WITH ROLLPIN TRADEMARK



Rollpin speeds production alignment of close tolerance shafts. The slotted, hollow steel spring pin, with chamfered ends, is simply pressed or driven into holes drilled to normal production tolerances. It compresses as driven, is self-locking and vibration-proof. Rollpin is light, easily removable, reusable and has a shear strength greater than a solid pin of the same diameter. Diameters from 1/16" to 1/2".

Rollpin, in place of rivets, set screws, dowels and stop pins can cut production costs as much as 90%. For detailed information on any electronic fastening problem, write: Elastic Stop Nut Corporation of America, 2330 Vauxhall Road, Union, New Jersey. Address Dept. R26-853.

ESNA

ELASTIC STOP NUT CORPORATION OF AMERICA
2330 Vauxhall Road, Union, N. J.

DESIGN HEADQUARTERS FOR SELF-LOCKING FASTENERS

If you write maker identify as IEN - 9045

"Hamilton Watch Co. counts on AMF De Walt for all maintenance!"

says Mr. Moses Good, Asst. Maintenance Engineer, Hamilton Watch Company, Lancaster, Pa.

"Our 2 De Walts do all our boxing and crating, and make all the work benches, cabinets and other furniture for our many departments. De Walt® is really versatile, we cross-cut, miter, bevel, compound miter and even do routing jobs sometimes. It's tops for all-around, all-purpose maintenance."

With one low-cost De Walt you'll be able to do just about any maintenance job—quickly ...safely...accurately. Takes up little space—takes the place of many machines.

Send for catalog to AMF De Walt Inc., Dept. IEN-54-8, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.
DE WALT
POWER SAWS
In Canada: De Walt Canada Ltd., Guelph, Ontario

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as IEN - 9046

TRADE MARK TO HALLMARK

Through the years, our trade mark has become a mark of quality that stands for the simplicity, efficiency and dependability of Curtis Universal Joints . . . the Hallmark of the industry.

In a wide range of applications, Curtis Joints offer the designer assurance of long life, and trouble-free performance — because they are quality-controlled at each step of manufacture.

CURTIS UNIVERSAL JOINTS

- 14 sizes always in stock
- Fewer parts, simpler construction
- Complete equipment for government tests

Our catalog torque and load ratings are substantiated by constant tests. You can depend on them.

Not sold through distributors. Write direct for free engineering data and price list.

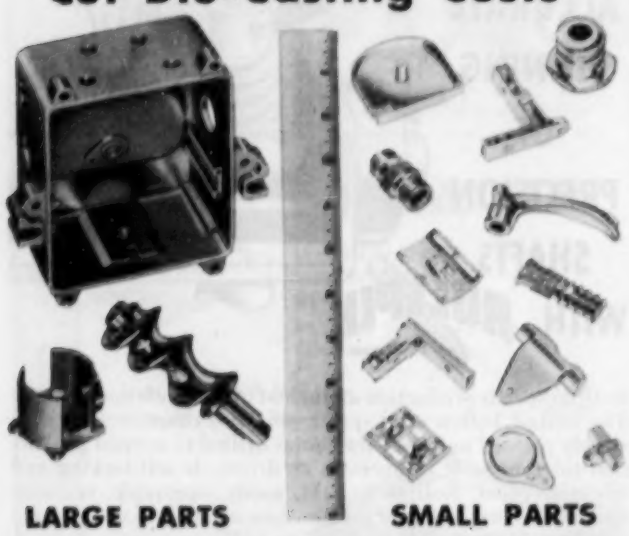
CURTIS Trade Mark

UNIVERSAL JOINT CO., INC.
7 BIRNIE AVE., SPRINGFIELD, MASS.
As near to you as your telephone

A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as IEN - 9047

Specialized Facilities Cut Die-Casting Costs



LARGE PARTS **SMALL PARTS**

Aluminum castings of all sizes . . . large zinc castings . . . made on most modern equipment for each. All machines designed or adapted by Dollin for greatest productivity. Small zinc castings—1000 per lb. to 3 per lb.—made at production speeds of screw machines, stamping presses on Dollin-designed *fully automatic* machines. Write for *General Bulletin or Small Parts Folder & Samples.* Send prints or samples for quotation. Engineering advice at no obligation. *Dollin Corp., 630 So. 21st St., Irvington 11, N. J.*

DOLLIN Zinc and Aluminum DIE-CASTINGS

If you write maker identify as IEN - 9048

In 1950 American Welding completed the first successful production flash butt-welding of the new wonder metal —Titanium Alloy. Since that time hundreds of Titanium components have been produced in our plant.

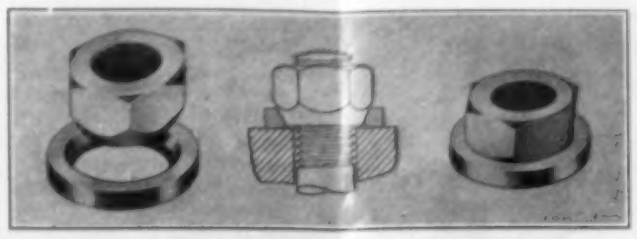
If you use, or are planning to use, fabricated Titanium components, let our Product Development Division study your problem. Our factory is equipped to perform welding, machining, and fabricating of all types of ferrous and non-ferrous metals. Call or write us today!

THE AMERICAN WELDING & MANUFACTURING CO.
160 DIETZ ROAD • WARREN, OHIO

If you write maker identify as IEN - 9049

Fastening - Two part locknut applies with taper bore spring washer

Source: MORSE DEVELOPMENT CO.
211 S. La Brea Ave., Dept. IEN, Los Angeles 36, Calif.



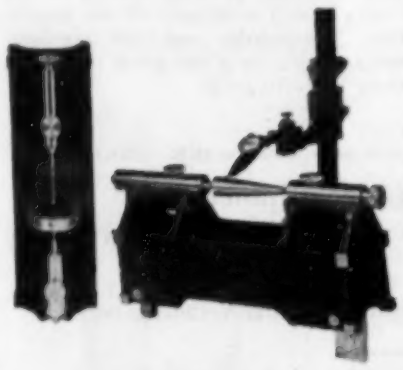
Available to order for specified use

Hi-Load trade names a new locknut made up of an assembly of a standard nut with a tapered nose and a spring washer into which this nose fits to make firm contact with the nut prior to the nut face reaching the face of a surface that is to be gripped. The nut is turned down until it "bottoms", using an ordinary wrench. The taper fit and the washer section and heat treatment are calculated to have applied correct tension on the bolt at the bottoming point.

If you write maker identify as IEN - 9050

Gage - Precision center swings 5 in., work to 7 in. in length

Source: INSPECTION DEVICES CO.
5636 Lake Park Ave., Dept. IEN, Chicago 37, Ill.



Bulletin 143

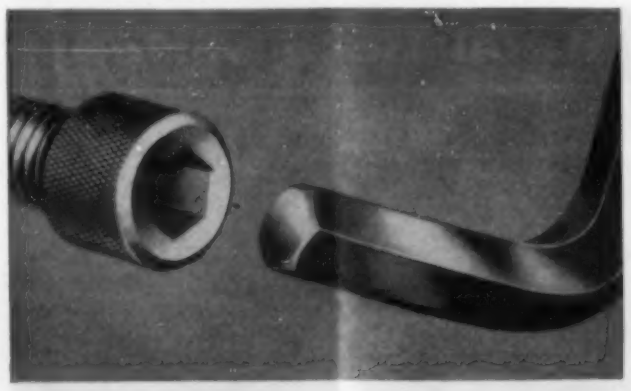
Surfcenter is a new universal gage that can be set up horizontally or on either end. It is equipped with three centers, long, short and spring loaded. Vees are held within 0.0002 in. for parallelism and squareness with the sides and ends. Sine pin holes are located within 0.0001 inch. Application is on a surface plate. Its castings are semi-steel.

If you write maker identify as IEN - 9051

Posts to 8 ft. in length and 6 in. in diameter can be driven by this new Danuser driver and breaker when it is applied on a Ford tractor and connected to the power takeoff. The driver is equipped with a 200-lb. head and strikes 25 blows per minute. A breaker head replaces the post head to break concrete, tamp soil and gravel. Ford Motor Company, Tractor and Implement Division, Dept. IEN, Birmingham, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9052



Bristol's hex socket screws assure quick, strong assembly

• Easier to apply in hard-to-get-at places, Bristol's hex socket cap screws spin readily into place, fit perfectly and wrench up tightly. Stronger holding, tamper-proof, they make production and maintenance easier. Get them from your industrial distributor. Sizes 0 wire to 1" in diameter. Write for free bulletins showing applications.

BRISTOL'S SOCKET SCREWS

THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Conn.

If you write maker identify as IEN - 9053

Defeat your "Arc Enemy" with CONTACT PROTECTORS

A unique application of SELENIUM RECTIFIERS developed by

Federal

TO PUT AN END TO ARCING CONTACTS

Contact Protectors by *Federal* are a *sure* way to economy and longer life for relay contacts . . . to eliminate circuit failure and interference caused by arcing.

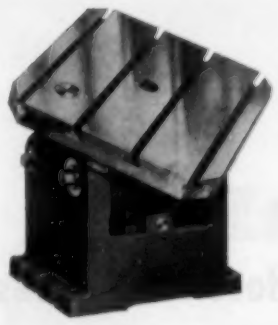
Now you can throw away your slide rule! . . . Select the Contact Protector for *your* application from Federal's extensive list.

Designed for use in AC or DC circuits . . . small in size . . . with pigtail leads for easy mounting. For full information, write to Federal, Dept. F-123A.

Federal Telephone and Radio Company
COMPONENTS DIVISION
100 Kingsland Road Clifton, N. J.

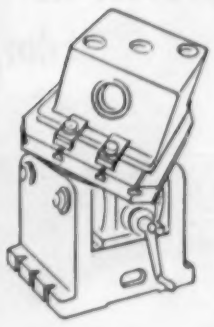
If you write maker identify as IEN - 9054

universal tables



save up to 50% of set up time on radials and boring mills

With one set up on Cincinnati Gilbert universal tables, you can drill at any angle up to 90° on five sides of a cube. Special feature: four-point support of the work in the lowered position takes strain off the worm, provides greatest possible rigidity of the work, best insurance of accuracy. Table sizes: 22" and 27" square. Height: 22". Four ¾" tee slots. Write for Bulletin 850.



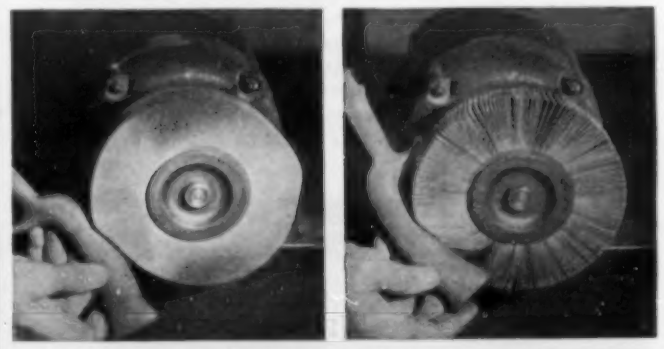
THE CINCINNATI GILBERT MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN - 9055

GRIND-O-FLEX

the new flexible
GRINDING WHEEL



- ★ Removes burrs, flash, tool marks from irregular surfaces
- ★ Will not "flat" or dig into contoured shapes
- ★ Finishes metals, plastics; satin finishes stainless steel
- ★ Requires no special equipment, attaches to power tools
- ★ Safe and easy to use, requires no skill or experience
- ★ Comes in a wide variety of aluminum-oxide grits
- ★ See your Industrial Supply Dealer or write for catalog

MERIT PRODUCTS, INC.
4023 Irving Place, Culver City, California

Manufacturers of SAND-O-FLEX and GRIND-O-FLEX abrasive tools

If you write maker identify as IEN - 9056

More Power to You *with* PORT-A-PONY

Everybody knows Port-A-Pony is the ideal portable power pipe threader for threading ¼" to 4" pipe in the shop or field, but . . .

Did you know —

Port-A-Pony will drive low speed winches used to pull electric cable through conduit?

Did you know —

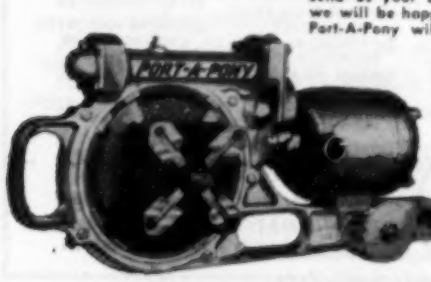
Port-A-Pony will open and close large gate valves doing the work of several men in a fraction of the time?

Did you know —

Port-A-Pony will drive flexible or rigid shafts replacing power take off units?

Yes, Port-A-Pony is built ruggedly with a ½ H.P. reversible motor whose power is converted into torque by the case hardened bronze ring gear that never fails.

Send us your specific problem and we will be happy to show you how Port-A-Pony will solve it.



THREAD-EZY MFG. CO.
333 N. Shiawassee
Corunna, Michigan

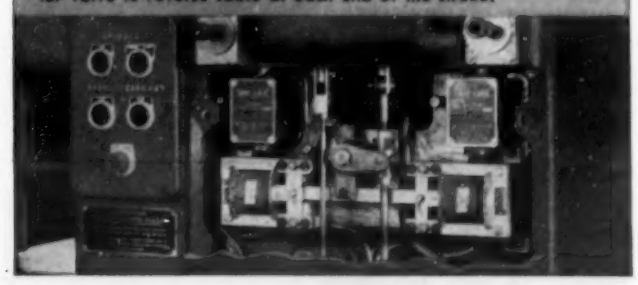
If you write maker identify as IEN - 9057

On 15 years experience— KENT OWENS has this to say:

"we specify Snap-Lock Limit Switches and Namco Solenoids on all the standard and special machines we build because of their dependable controls with trouble-free long life"

L. F. Rothert,
Director of Engineering
Machine Tool Division

On No. 2-20 Kent-Owens Production Type Milling Machine—the double Limit Switch and Solenoid combination shifts hydraulic selector valve to reverse table at each end of the stroke.



NOTHING determines the efficiency of your production equipment, and the ultimate cost of its product, so much as the often hidden but vital controls that insure its split second precision, and elimination of downtime losses.

That's exactly the function and the guarantee behind Snap-Lock Switches, designed with separate sealed off mechanical sides, and of Namco "Stellite"-Weld Solenoids. Each is a patented product.

Built first to improve controls—"built with machine tool ruggedness"—for our own Acme-Gridley Automatics, these electrical devices are now specified as standard equipment by 90% of this country's machine tool builders alone. Army, Navy and Aircraft suppliers specify them used singly and in combination. Other uses in valves, clutches, switches and innumerable devices, number in thousands.

If you need to step up a cycle of operation—get rid of mechanical wear, save space and insure more dependable, continuous control of your production, ask our Engineers to help you "design one in" to your machine or process. Engineering specification catalogs—Limit Switches EM-51; Solenoid EM-52.

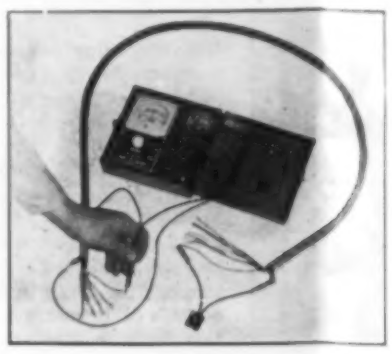
The NATIONAL ACME COMPANY
170 EAST 131st STREET • CLEVELAND 8, OHIO

ACME-GRIDLEY BAR and CHUCKING AUTOMATICS
1-4-6 and 8 Spindle • Hydraulic Thread Rolling Machines • Automatic Threading Dies and Taps • Limit, Motor Starter and Control Station Switches • Solenoids • Contract Manufacturing

If you write maker identify as IEN - 9059

Testing - Circuit tracer also indicates "hot" lines and grounds

Source: JACKSON ELECTRICAL INSTRUMENT CO.
16-18 Patterson Blvd., Dept. IEN, Dayton 2, Ohio



Lists at $39.50

Tagged jumpers, numbered 1 to 9, are employed to connect the lines in an electric cable to its metallic sheath at one end of a cable in which the circuits are to be traced. A ground line is then connected between the opposite end of the cable sheath and this new Trace-O-Meter and the test probe is touched to any one of the projecting lines. The correct number of that line, corresponding to the jumper attached at the opposite end, will show on the meter. The instrument can be employed to check cables containing nine leads or larger cables in groups of nine.

Each line can be tested, if it is thought to be carrying current, by connecting it to the neon light in the instrument housing. If there is a ground or short the meter needle will not move. The jumpers, ground lead, probe lead and meter are contained in a carrying case in removable assembly. A control, to preset the meter in relation to electric loss through the lines, is included on the instrument housing. Operation is by a flashlight battery. It will last for several months.

If you write maker identify as IEN - 9060

Hoist - Portable ratchet design to lift and pull, rates to 1½ ton

Source: LUG-ALL COMPANY
331 E. Lancaster Ave., Dept. IEN, Wynnewood 3, Pa.

Weighs 8¾ pounds

Corrosion proof construction characterizes this new Marine Model of the company's Lug-All hand operated ratchet hoist, previously described IEN-1289-53. The new assembly employs a 133 strand stainless steel preformed aircraft rope. Its frame is anodized aluminum alloy. The handle acts as a safety device by bending if the hoist is dangerously overloaded.

Construction includes three swivel hooks and a built-in pulley block for working around corners and in a minimum of 10 in. of head room. Bearings are permanently lubricated and sealed. The reversible handle can be removed quickly to employ the unit as a tamper proof load binder. The pulley equipped hook can be removed and the hook at the end of the rope used for direct pull on ¾-ton rating. Double interlocking pawls hold the load so a brake is not required. Lift range on direct pull is 10 feet. List price of the new model is $44.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9061

CUT CORROSION COSTS WITH TYGON PAINT

Easily applied liquid plastic dries quickly to form a tough film that resists acids, alkalies and oils.

Used with Tygorust Primer, Tygon Paint simplifies maintenance painting—cuts surface preparation—outlasts conventional paints many times over.

WRITE FOR BULLETIN 750 420 D

U. S. STONEWARE
AKRON 9, OHIO

If you write maker identify as IEN - 9062

It's never too early for magnetic protection . . .

PRATER PERMANENT MAGNETS

are recommended for installation — **today** — before uncontrolled tramp iron is allowed to play havoc with your equipment.

PRATER PERMANENT MAGNETS, readily attached to hoppers, spouts or chutes, reach deep into the flow to weed out these destructive metals, increase operating efficiency and safeguard life and property. Each installation is specific as to type, size and arrangement of magnets, as specified by your requirements.

Write for details.

- SINGLE GAP
- DOUBLE GAP
- HEAVY DUTY
- HUMP CHUTE

PRATER PULVERIZER COMPANY
1536 S. 55th Court • Chicago 51, Ill.

PRATER

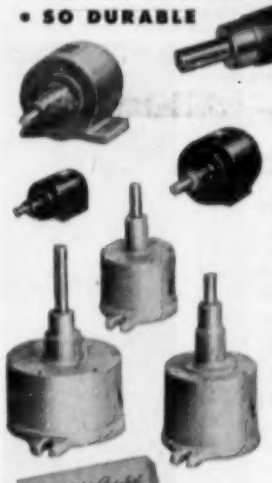
If you write maker identify as IEN - 9063

You Need the LOW-COST MEAD *Air-Clamp*®

SINGLE ACTING

- SO SIMPLE
- SO EFFECTIVE
- SO EASY TO USE
- SO DURABLE

Air Cylinder



STROKES		
Bore	Horizontal	Vertical
1"	½"-1"-2"-3"	½"-1"-2"-3"
2¼"	1"-2"-3"	1"-2"
3"	1"-2"-3"	½"-2"
4"	2"-2½"	2"
5"	3"	3"
6"	3"	2"

NEW CATALOG READY! Complete line of simple, adaptable, low-cost, compact spring-return air cylinders. Cut costs and speed up production the modern, Mead Air Power way. Write today.

MEAD SPECIALTIES COMPANY
4114 No. Knox Ave., Dept. EA-84, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 9064

NEW BASEBOARD TEES with NIBCO QUALITY

Built-in, threaded ⅛" tapping for air vent saves time, saves bushings and makes a neater job.

NIBCO quality control with individual pressure tests for each fitting eliminates test leaks. Precision solder cups make sound joints and save solder.

Specify NIBCO Baseboard Tees at your jobber's. Write for samples you can test on your own installations.

NIBCO NORTHERN INDIANA BRASS CO.
861 PLUM STREET, ELKHART, INDIANA

If you write maker identify as IEN - 9065

You can provide easy mobility to a variety of industrial products with

IRONBOUND ALL-PURPOSE HANDLING UNITS . . .

POPULAR IRONBOUND FLO TRUK

● An easy to handle ruggedly constructed unit for carrying bulky and heavy loads at lowest cost. Seven standard sizes with one or two push handles makes it easy to select the proper truck for your requirements. Ask an Ironbound engineer for suggestions.

The HANDY for furniture and similar items.

The HAULER for cases, crates, tote boxes, etc.

The HUSKY for general use throughout the plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 9066

NEW MAINTENANCE EFFICIENCY with ERIEZ Magnetic "SWEEPERETTE"

10-DAY FREE TRIAL

Here is the self-contained magnetic cleaner, "Sweeperette"! It cleans tramp iron from plant floors, parking lots, warehouses, etc. with vacuum cleaner efficiency. No electric current. No wires. *Your first cost is the last cost.*

"Sweeperette" magnetic tube of powerful Alnico V, rolls with the wheels . . picks up nails, tacks, scrap iron on 360° of its surface up to a thickness of ⅝"! Offset handle permits the unit to go under work benches, machinery, etc. The magnetic tube is easily removed from the frame and the tramp iron is quickly wiped off with neoprene wiper ring into collection pan which is part of the unit.

Tube then becomes a real MAGNETIC WAND! Can be used as a retriever magnet . . . as a small batch cleaner . . . as an underwater recover magnet! A dozen daily maintenance uses.

Buy "Sweeperette" direct from factory:

Model	Overall Width	Approx. Shpg. Weight	Price: F.O.B. Erie, Pa.
S-8	10 3/16"	5 lbs.	$34.50
S-12	14 3/16"	6 lbs.	40.50
S-16	18 3/16"	7 lbs.	47.50
S-20	22 3/16"	7½ lbs.	55.00
S-24	26 3/16"	8 lbs.	61.50
S-32	34 3/16"	9½ lbs.	70.00

Or write for brochure giving full information. Free 10-day trial. Satisfaction guaranteed or money back.

ERIEZ ERIEZ
MANUFACTURING COMPANY
81H Magnet Drive, Erie, Pa.

If you write maker identify as IEN - 9067

Backstand belts triple production!

Send for Armour's free booklet to learn this amazing method!

Metal polishing has hit a new production high with backstand belts. They cut faster, cooler than set-up wheels—and cut down on the number of operations. In some plants, backstand belts have *tripled* production! To learn more about this modern method, send for Armour's free booklet, "Backstand-Belt Polishing."

EB

Mail this coupon today

Please send booklet "Backstand-Belt Polishing"

Name ..... *Title* .....
Company .....
Address .....
City ..... *Zone* ..... *State* .....

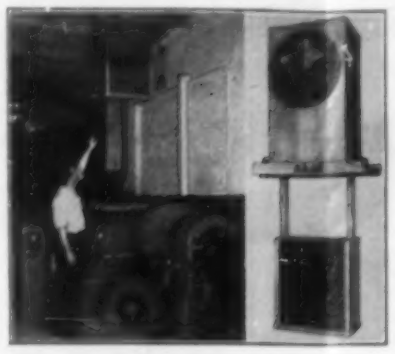
ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 9068

Cooling - Air conditioner mounts in building roof, rates 2 ton

Source: KRITZER PRODUCTS
1234 W. Le Moyne, Dept. IEN, Chicago 22, Ill.



Self-contained assembly

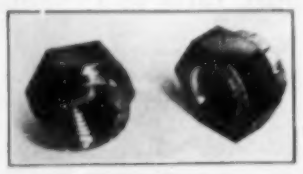
Evaporating coil is assembled with a motor driven fan and air filter panel in the lower rectangular section of this new air conditioning equipment. It connects through two uprights and is supported by these uprights beneath a condenser section. This section has a hermetically sealed refrigerating unit and a condenser coil and motor driven fan. It mounts on the roof.

The complete assembly weighs about 350 lb. and delivers filtered and cooled air at the rate of 1,050 cfm. A small motor driven condensate pump picks up moisture that accumulates at the base of the evaporator and delivers it to the condenser coil where its evaporative action assists the condensing action. The evaporator housing measures about 25 by 20 by 30 inches. Operation is on 220 volt 60 cycle ac.

If you write maker identify as IEN - 9069

Fastening - Steel locknut, integral washer, No. 10 to ½ inch

Source: STANDARD PRESSED STEEL CO.
Box 732, Dept. IEN, Jenkintown, Pa.



Can be reused

Series 32FE is new design of the Flexloc locknut for application where temperatures will not exceed 550 deg. F. The nut has been designed particularly for internal combustion engines. Feature in the design is the washer-like integral face which stands about 1/32 in. in front of the body of the nut. This face is held square to 0.005 in. with the pitch diameter on sizes to 7/16 in. and to 0.006 on the ½-in. size. The nut carries National Fine threads made to the new unified tolerance. The material is AMS5024C alloy steel. Finish is in cadmium plating.

Locking action, to hold the nut at any point along a bolt or stud, whether it is seated or not, is provided by the slotted top or locking section which is divided into six equal segments. These segments are closed in to make the inside diameter smaller than the outside diameter of the companion bolt so this portion of the nut must be expanded, as it is applied, by pressure between it and the bolt threads.

If you write maker identify as IEN - 9070

New line of chart paper and inks, for use in recorders, has been developed by Minneapolis-Honeywell Regulator Co., Station 64, Dept. IEN, Philadelphia 44, Pa. The paper is dimensionally stable, sized to take the ink for a clean clear record, free from holes, dirt particles, defects. The ink contains a preservative to combat bacterial growth.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9071

A.C.M.I. BORESCOPES

for close-up visual inspection of internal surfaces and hidden parts

A.C.M.I. Borescopes are available in 4 angles of vision (as above)—in diameters of .120" to 4.00" —in lengths of 4" to 720". Special models for special problems

A.C.M.I. Borescopes permit close-up visual examination of interior areas and surfaces not otherwise visible. They save time and money, and prevent costly dismantling. • Each Borescope is a compact, self-illuminated industrial telescope of highest quality, employing a precision optical system, that produces a flat visual field. Lens systems are fully corrected for color, spherical aberrations, and coma, with all lens surfaces coated to increase light transmission.

Write for free informational folder, or tell us your problem.

American Cystoscope Makers, Inc.
1341 LAFAYETTE AVENUE NEW YORK 59, N. Y.

If you write maker identify as IEN - 9072

RELAYS

IMMEDIATE DELIVERY FROM STOCK

Special attention is given to orders of one or more relays for engineering and lab samples or for experimental purposes. 24 hour delivery will permit you to draw from our stock rather than schedule your orders for months in advance.

Relay Sales maintains the world's largest stock of relays for practically every application. Nothing but first line products of leading manufacturers are carried. Each relay is brand new, individually inspected and unconditionally guaranteed. Prices less than market.

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STANDARD TELEPHONE RELAYS
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Phone: AUstin 7-0709
Write for New Relay Catalog C-5
4721 W. MADISON STREET, Dept. 9
CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 9073

Norgren AIR CONTROL VALVES give you

- BETTER AIR EQUIPMENT PERFORMANCE
- LESS EQUIPMENT MAINTENANCE
- LOWER AIR COSTS

AUTOMATIC RELIEF VALVES

ADJUSTABLE AIR GOVERNORS

BLOW GUNS

NEEDLE VALVES

Valves • Filters • Regulators • Lubricators • Hose Assemblies

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3432 So. Elati, Englewood, Colo.

If you write maker identify as IEN - 9075

REALOCK FENCE

saves you money

- . . . Saves cost of extra guard personnel
- . . . Cuts cost of ground maintenance
- . . . Cuts down pilferage losses
- . . . Makes possible lower insurance rates
- . . . Guards against loss from burglary and vandalism.

Consult your classified telephone directory for nearest sales office or write to any of our three division offices for free estimate or catalogue.

THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Buffalo

REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
BRANCHES IN ALL KEY CITIES
CF&I 2013

If you write maker identify as IEN - 9076

DESIGNED TO MEET EXCEPTIONAL DEMANDS

ALCO-LITE
TYPE LDL
DeLuxe Heavy Duty
EXTENSION LADDER

All the acknowledged advantages of aluminum are combined in this ladder of exceptional strength and exceptional ease of handling. The corrugated non-slip rungs are permanently mounted by the exclusive ALCO-LITE embossed gusset and expansion bushing construction. Seven sizes, from 18 ft.to 36½ ft. Complete with locks, pulleys and ropes.

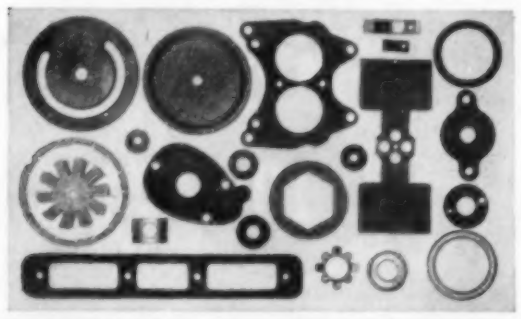
MEMBER: METAL LADDERS ASSOCIATION

ALCO-LITE ALUMINUM LADDERS
ALUMINUM LADDER COMPANY
100 CARBIS STREET • WORTHINGTON, PENNA.

If you write maker identify as IEN - 9077

GOT A PRODUCTION OR DESIGN PROBLEM?

• GASKETS • PACKINGS • WASHERS
• SEALS • SHIMS • BUSHINGS • "O" RINGS



80 YEARS OF AUBURN "KNOW HOW" HAS THE ANSWERS!

Yes . . . over 80 years experience in engineering, designing, fabricating and production qualifies Auburn to help you find the ideal answer to your problem. Where gaskets, washers, and other sealing devices are concerned, Auburn engineers are tops in the field. Their know-how is yours—for the asking. We are tooled to fabricate in virtually any material:

Leather, Asbestos, Teflon, Silicone Rubber, Neoprene, Rubber, Cork, Fibre Compositions, Phenolics, Felt, Cloth, Paper, Cardboard, Plastics, Brass, Steel, Copper, Aluminum, Other Special Materials.

Send us your specifications or blueprints. You'll receive quotations, recommendations without obligation.

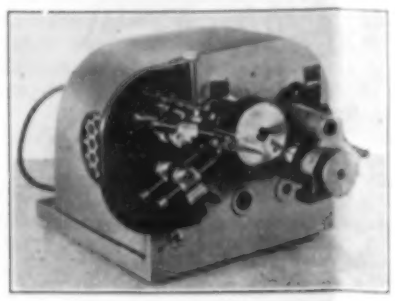
AUBURN MANUFACTURING COMPANY
302 Stack St., Middletown, Conn.
ALCO

Representatives: Atlanta, Ga.; Detroit, Mich.; St. Louis, Mo.; Los Angeles, Cal.; Minneapolis, Minn.; Washington, D. C.; Cincinnati, O.

If you write maker identify as IEN - 9078

Marking - Roll type machine for cylindrical pieces to 1½ inches

Source: MARKEM MACHINE CO.
150 Congress St., Dept. IEN, Keene 44, N. H.



For short run production

Ampules, vials, small bottles, paper tubes, cylindrical objects that cannot be chute fed because of their shape, can be label marked with this new Model 52AC machine. It adjusts to handle work from ¼ to 1½ in. in diameter. It positions the work in an adjustable ball bearing cradle. It presents interchangeable printing plates for the marking action.

Imprint dimensions are to 2¾ in. in length by 1¾ in. in height. Date, code or control number can be printed in one line and can be changed independently of the printing plate. The machine employs fast drying inks that the company is prepared to supply. Production rate of the hand fed machine is 45 pieces per minute. Drive is by a 1/20-hp. motor. Dimensions are 18 by 14 by 10½ inches.

If you write maker identify as IEN - 9079

Sealing - Plastic packings based upon chemically inert teflon

Source: FLEXROCK COMPANY
3604-C Filbert St., Dept. IEN, Philadelphia 1, Pa.

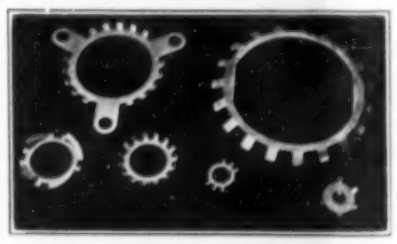
Bulletin 77 upon request

The company announces installation of a new department to mold and machine packing rings based upon teflon combined with materials such as shredded lead, shredded aluminum, and plastic semi-metallic self-lubricating materials. The new department is prepared to die form, mold and machine special as well as standard packings such as the Flexrock 403, previously described IEN-7157-54.

If you write maker identify as IEN - 9080

Fastening - Lock washers made to order, minimized tool cost

Source: DAYTON ROGERS MFG. COMPANY
2824 13th Ave., Dept. IEN, Minneapolis 7, Minn.



Typical designs

The company announces addition of a line of specification lock washers in connection with its contract stamping work in which tool costs are minimized on short runs. Average tool cost ranges from about 10 to 20 per cent of the cost of conventional tooling to stamp the washers from sheet metal stock. The company is prepared to supply the washers to fit shafts measuring ⅛ to 6 in. in diameter.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

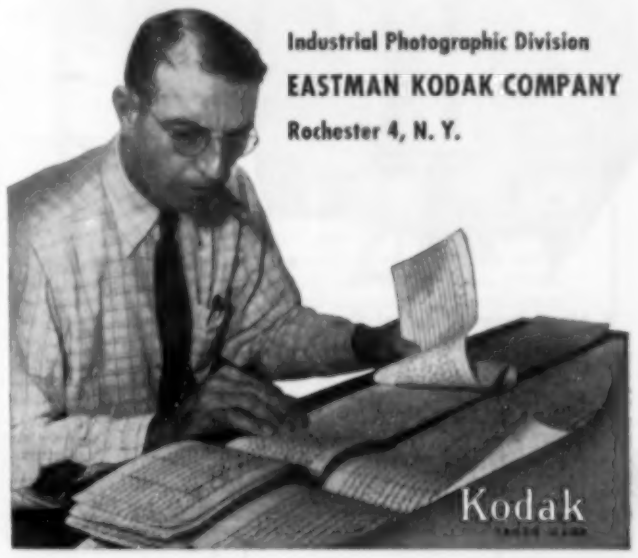
If you write maker identify as IEN - 9081

If you write maker identify as IEN - 9082

"Kodak Photorecording Papers and Films . . . how to pick the one you need"

That's the title of a folder we recently published.

It gives you the details about the broad range of photographic films and papers we produce for photorecording purposes, tells you which to use for the application you have in mind, lists the various spoolings and lengths available. If you use photorecording now, or plan to use it in the future, you should have a copy. Just write to:



Industrial Photographic Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 9083

"IT SOLVED OUR PROBLEMS"

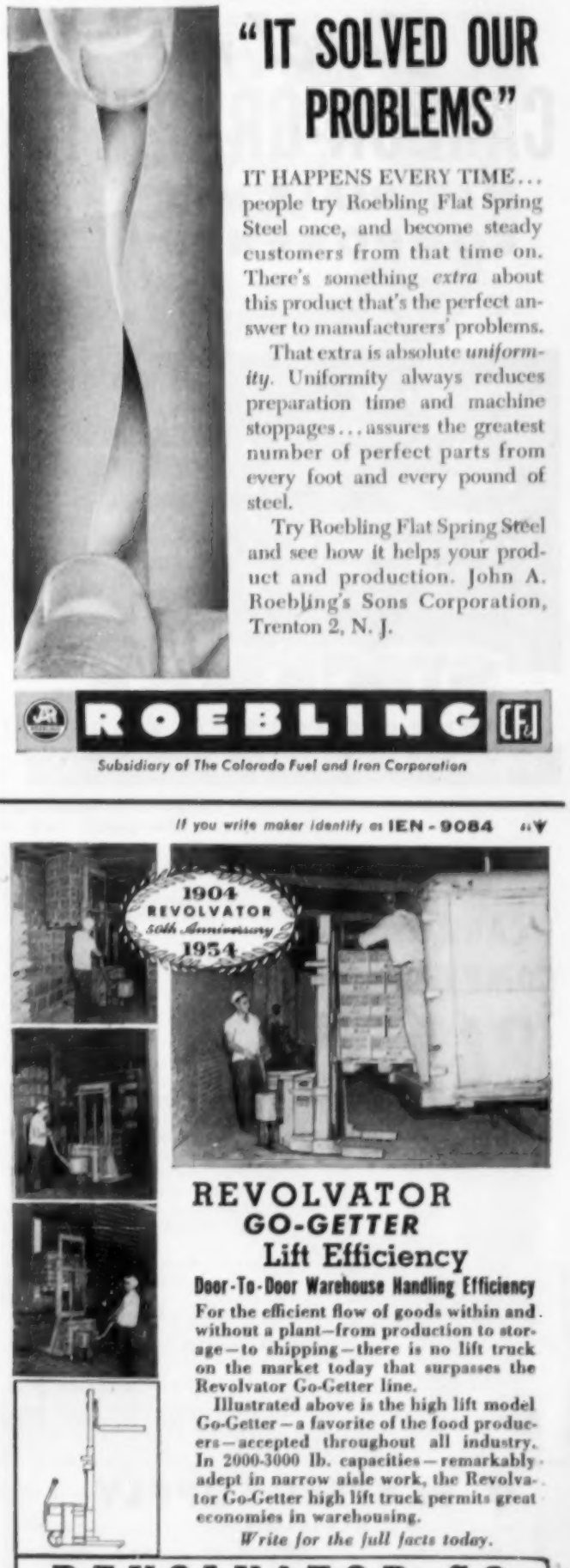
IT HAPPENS EVERY TIME... people try Roebling Flat Spring Steel once, and become steady customers from that time on. There's something *extra* about this product that's the perfect answer to manufacturers' problems.

That extra is absolute *uniformity*. Uniformity always reduces preparation time and machine stoppages... assures the greatest number of perfect parts from every foot and every pound of steel.

Try Roebling Flat Spring Steel and see how it helps your product and production. John A. Roebling's Sons Corporation, Trenton 2, N. J.

ROEBLING CF&I
Subsidiary of The Colorado Fuel and Iron Corporation

If you write maker identify as IEN - 9084



REVOLVATOR GO-GETTER Lift Efficiency

Door-To-Door Warehouse Handling Efficiency

For the efficient flow of goods within and without a plant—from production to storage—to shipping—there is no lift truck on the market today that surpasses the Revolvator Go-Getter line.

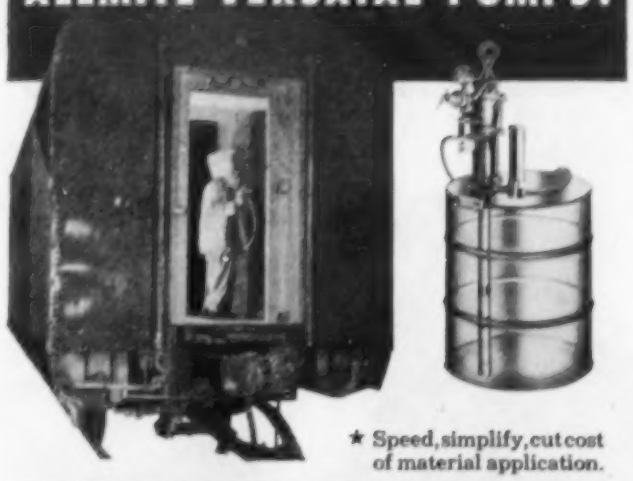
Illustrated above is the high lift model Go-Getter—a favorite of the food producers—accepted throughout all industry. In 2000-3000 lb. capacities—remarkably adept in narrow aisle work, the Revolvator Go-Getter high lift truck permits great economies in warehousing.

Write for the full facts today.

REVOLVATOR CO.
8759 Tonnele Ave. North Bergen, N. J.

If you write maker identify as **IEN - 9085**

SPRAY SOUND INSULATION
DIRECT FROM ORIGINAL DRUMS WITH ALEMITE VERSATAL PUMPS!



★ Speed, simplify, cut cost of material application.

★ Air-powered Versatal Pumps deliver materials direct from original 54-gallon drums.

★ Pump through long lines of hose or pipe.

★ Handle heaviest material even at low temperatures.

FREE Idea book. How Alemite Versatal Equipment can help solve your material handling problems. Write Alemite, Dept. B-84, 1850 Diversey Parkway, Chicago 14, Illinois.

ALEMITE Versatal

If you write maker identify as **IEN - 9086**

Save! with CARBON-GRAPHITE
MATERIALS *and* COMPONENTS

Write for Booklet 40A for details on Stackpole carbon-graphite specialties to solve friction, temperature, corrosion, lubricating and arcing problems. Letterhead request, please!

- ✓ GROUND RODS
- ✓ VOLTAGE REGULATOR DISCS
- ✓ BEARINGS
- ✓ DASH POT PLUNGERS
- ✓ RESISTANCE WELDING AND BRAZING TIPS
- ✓ GLASS MOLDS
- ✓ NON-WELDING CONTACTS
- ✓ FRICTION SEGMENTS
- ✓ CLUTCH RINGS
- ✓ BRAZING BOATS
- ✓ MOLDS AND DIES
- ✓ CONTINUOUS CASTING DIES

STACKPOLE

STACKPOLE CARBON COMPANY • St. Marys, Pa.

EVERYTHING IN CARBON BUT DIAMONDS

If you write maker identify as **IEN - 9087**

WE CARRY COMPLETE BAR STOCKS

- cold finished carbon
- hot rolled alloy
- cold finished alloy
- stainless

• All our warehouses carry a wide range of types, sizes and grades of steel bars. And you can always count on consistent high quality with the bars we carry. Why not simplify your buying by ordering *all* your bar stock from a single dependable source . . . U. S. Steel Supply?

WRITE FOR FREE BOOKLETS NOW

U. S. Steel Supply Division,
208 So. La Salle St., Chicago 4, Ill.

Please send me, without obligation, descriptive literature on the following types of bars:

☐ carbon C.F. ☐ alloy H.R. ☐ alloy C.F. ☐ stainless

Name.....

Firm.....

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City.....State.....

U. S. STEEL SUPPLY DIVISION

General Offices
208 So. La Salle St., Chicago 4, Ill.

USS

Warehouses and Sales Offices Coast to Coast

UNITED STATES STEEL

Brief reviews to advise you of available new information published by the manufacturers covering products they offer.

If you write maker identify as **IEN - 0702**

AIR CONDITIONING . . Advantages of controlled temperature and humidity are stated in 8-page Bulletin 122 for uses from yeast manufacture to a high voltage lab. Niagara Blower Co., 3117 Chrysler Bldg., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 0703**

AWARDS . . "Industry's Medals of Honor", new 16-page pocket booklet, describes employee service emblems, tells how to set up a program and make a presentation. American Emblem Co., Box 116, Dept. IEN, Utica, N. Y.

If you write maker identify as **IEN - 0704**

AWARDS . . Employee service emblems, reasons for their use, methods of awarding, picture examples, schedule employed by nine companies. "Personnel Awards", 12 pages. Spies Brothers Inc., 27 E. Monroe St., Dept. IEN, Chicago 3, Ill.

If you write maker identify as **IEN - 0705**

CONVEYOR BELT . . Koroseal belt resists acids and greases, alkaline or neutral salts. It is for food-handling and light industrial service. Catalog 2640, 4 pages. B. F. Goodrich Co., 450 S. Main St., Dept. IEN, Akron 11, Ohio

If you write maker identify as **IEN - 0706**

BLOWERS . . Type-J centrifugal unit is made in sizes from 12 to 132 in. in a variety of mounting and drive arrangements. Capacity tables in 48-page Bulletin 2500 are marked to indicate the best operating point at each pressure, both for speed and horsepower. Robinson Ventilating Co., Dept. IEN, Zelienople, Pa.

If you write maker identify as **IEN - 0707**

TELEPHONE BOOTH . . Sound-absorbing design enables you to hear clearly in a noisy location. Model 45 Acousti-Booth is doorless, triangular in shape. Bulletin A-131, 4 pages, suggests multiple mounting arrangements. Burgess-Manning Co., 5970 Northwest Highway, Dept. IEN, Chicago 31, Ill.

If you write maker identify as **IEN - 0708**

CIRCUIT BREAKERS . . Engineering Guide devotes its 24 pages to descriptions of hydraulic-magnetic breaker principle, design and operation. It includes delay curves, circuit forms and applications, voltage-drop and impedance charts. Ask for Bulletin 201. Heinemann Electric Co., 518 Plum St., Dept. IEN, Trenton 2, N. J.

If you write maker identify as **IEN - 0709**

BLAST CLEANING . . Centrifugal, compressed-air and pressure water are three methods of applying abrasive blast to clean metal parts. Bulletin 1210, 24 pages, reviews equipment available for each together with dust collectors. Pangborn Corp., 230 Pangborn Blvd., Dept. IEN, Hagerstown, Md.

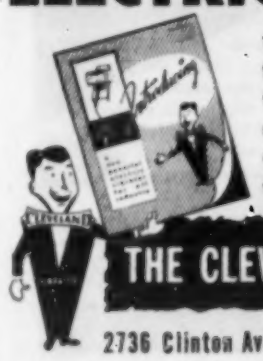
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9088**

NEW COMPACT POWERFUL

Quiet!

ELECTRIC VIBRATOR



To speed the flow of stubborn material from hoppers, bins and chutes of all sizes and shapes.

Obtainable in all voltage, phase and cycle requirements.

Write today for complete literature.

THE CLEVELAND VIBRATOR CO.

2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as **IEN - 9089**

FIRST high temperature hose assembly using TEFLON*

. . . handles even the most corrosive fluids to +450° F!

Fluoroflex†-T hose assemblies mark a tremendous advance in flexible line serviceability. Look at these features:

- Fluoroflex-T (Teflon compound) tube . . . chemical-proof, non-swelling . . . absorbs vibration
- Flexibility that doesn't change from −100° to +450°
- Stainless steel braid—for 1000 psi working pressures and for high external corrosion resistance
- Compact fittings swaged to armor and tube—won't blow off
- Light weight! Space saving! Non aging!

Write for Bulletin FH-1.

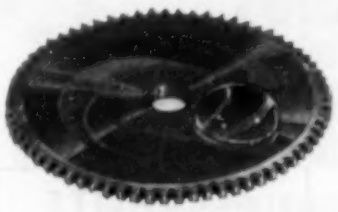
**DuPont trademark for its tetrafluoroethylene resin.*
†Resistoflex trademark for products from fluorocarbon resins.

RESISTOFLEX *corporation*

Belleville 9, New Jersey

If you write maker identify as **IEN - 9090**

moisture is a menace



Excessive humidity causes corrosion, fogging, fungus growth, and loss of dielectric strength.

DriAire's knowledge and experience in the proper application of dehydration could well offer the solution to your problems.

DriAire dehydrators and humidity indicators are available in many sizes and types. Your inquiries are invited.

DRIAIRE

DriAire

INCORPORATED

SOUTH NORWALK, CONNECTICUT

If you write maker identify as **IEN - 9091**

Incredible! ASPHALT MASTIC FLOORS

for only 10¢ a sq. ft. (or less)

WE CAN PROVE IT!

Now you can have — at this unheard-of price — a mastic floor of highest quality completely installed. The Asphalt Clearing House Division, with forty years' experience in asphalt flooring, has solved the riddle of high asphalt prices to save you up to three-quarters of your present cost.

INVESTIGATE! Write for this free descriptive booklet and price list! No obligation, no salesmen — that's how we save you money!

ASPHALT CLEARING HOUSE DIVISION

FLASH-STONE COMPANY, INC.

3723 Pulaski Ave., Philadelphia 40, Pa.

If you write maker identify as IEN - 9092

NEW SIZE 2U IMPACTOOL

This MIGHTY MITE is a real Multi-purpose tool

The new 2U Impactool will do all these jobs—and do them fast—

- run and remove nuts
- drill
- ream
- tap
- drive and remove screws
- drive and remove studs
- saw holes
- drill masonry
- bore wood
- extract broken studs
- run wire brushes

This newest and lightest Impactool has the time-proven Ingersoll-Rand impact mechanism that has an unmatched reputation for power and dependability in both air and electric Impactools.

Ask for a demonstration of this new, powerful little Impactool. You'll find it featured by leading automotive jobbers and industrial distributors from coast to coast.

SPECIFICATIONS

Capacity, bolt size ¼" — Impacts per minute 2100
Weight, less cable 5 lbs. — Square Socket Driver ⅜"
Free Speed 1750 rpm — Standard Voltage 110 volts AC-DC

Ingersoll-Rand
11 Broadway, New York 4, N.Y. 18-20
Originators of Impactools—Air and Electric

If you write maker identify as IEN - 9093

an ACCO product

Campbell Abrasive Cutter

Here's a versatile cutter

• This new CAMPBELL Model 28 SEVER-ALL Abrasive Cutter has the capacity for a wide variety of cutting operations. Ideal for quick cutting of all materials in metal-working and fabricating shops. Portability feature makes it especially suitable for construction work.

Important Features Include:

1. Work clamped on both sides of cut by hand-operated, self-centering work holders.
2. Can be supplied with foot-operated treadle.
3. Time of cut is approximately 3 seconds per square inch of material.
4. Cutting wheel completely enclosed during operation except for opening to clear work. All steel construction with full safety protection for operator.
5. Lowering of guard permits accurate location of work, permits long pieces to be placed in machine without threading through. Can be supplied with work stop.
6. Capacity—Solids up to 4" x 4" square; angles and channels to 8"; tubes and pipes to 4" O.D.; 4" angles and channels and 4" O.D. pipe at 45° angles, based on use of 18" cutting wheel and 10 H.P. motor.

Write today for specifications on the new SEVER-ALL or Bulletin DH-301 on the Campbell Abrasive Cutting Method

ACCO
Campbell Machine Division
AMERICAN CHAIN & CABLE
941 Connecticut Avenue, Bridgeport 2, Connecticut

Wet and Dry Cutters and Nibblers

NEW LITERATURE —Continued

If you write maker identify as IEN - 0710

CLEANING MATERIALS . . Condensed recommendations on materials and procedures to clean equipment, buildings, dishes, windows, and to do paint stripping, descaling. "Plant Maintenance Cleaning Guide", 12 pages. Oakite Products Inc., 116-A Rector St., Dept. IEN, New York 6, N. Y.

If you write maker identify as IEN - 0711

CONDUIT FITTINGS . . Outlet boxes and covers in some 170 types for rigid and flexible conduit, armored cable, EMT. Catalog 18-74, 40 pages. General Electric Co., 1285 Boston Ave., Dept. IEN, Bridgeport 2, Conn.

If you write maker identify as IEN - 0712

CONSTRUCTION . . Steel wire and cable are the tensioning elements in prestressed-concrete construction. How the method works, examples of use, data on company's products, in 16-page Catalog PC-929. John A. Roebling's Sons Corp., 640 S. Broad St., Dept. IEN, Trenton 2, N. J.

If you write maker identify as IEN - 0713

OVERHEAD CONVEYING . . Tramrail carriers and track, switches, cranes, drives, buckets and grabs are detailed in 12-page Booklet 2008-K. You may be interested to see some of the automatic carriers shown. Cleveland Crane & Engineering Co., 1137 E. 283rd St., Dept. IEN, Wickliffe, Ohio

If you write maker identify as IEN - 0714

COOLING . . Refrigerating unit and exchanger to cool water or other liquid through 100 deg. in one pass without danger of freezing. Bulletin 153-I, just released, has 8 pages of information on how the equipment can be used. Frick Co., 320 Broadway, Dept. IEN, Waynesboro, Pa.

If you write maker identify as IEN - 0715

CORROSION PROOFING . . Line of organic materials includes phenolics, asphaltum, gilsonites, coal tars, epoxys, vinyls, furfuryls. Eight-page Bulletin C-150 has a two-page chart on properties and application recommendations. Cellcote Co., 4855 Ridge Road, Dept. IEN, Cleveland 9, Ohio

If you write maker identify as IEN - 0716

CORROSION PROOFING . . Hot-Melt plastic coating protects metal parts, tools, bearings, pipe fittings in processing, storage and shipping. It strips off readily. Bulletin, "Dip-Pak," 4 pages. Fidelity Chemical Products Corp., 470 Frelinghuysen Ave., Dept. IEN, Newark 5, N. J.

If you write maker identify as IEN - 0717

CUTTING TOOLS . . Counterbores and countersinks with the cutters hand-detachable from the taper-shank holders and with detachable pilots. Bulletin 60446, 8 pages. Ex-Cell-O Corp., 1200 Oakman Blvd., Dept. IEN, Detroit 32, Mich.

If you write maker identify as IEN - 0718

DRILLING HEADS . . Multiple-spindle head for a standard drill press, also a drill chip breaker, drilling coolant table, adjustable-angle head with flexible-shaft drive, and tapping heads. Catalog 954-1, 16 pages. Commander Mfg. Co., 4225 W. Kinzie St., Dept. IEN, Chicago 24, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9095

THE GUN THAT KILLS DIRT!

Let Us Demonstrate this Amazing Cleaner On the Job You Select

In your plant . . . somewhere . . . there is a piece of equipment that presents a cleaning problem too tough for ordinary hand methods. See how quickly and easily it can be made sparkling clean by requesting a demonstration of the Clayton-Kerrick Steam Cleaner in action. Our nearest distributor will bring his demonstrating unit into your plant at the time you specify. You incur no obligation except to review the results.

PROOF OF SUPERIORITY

Impactometer tests, conducted to qualify steam cleaning machines for U. S. Govt. use, prove that the Clayton-Kerrick has 30% to 50% more nozzle impact pressure than competing machines.

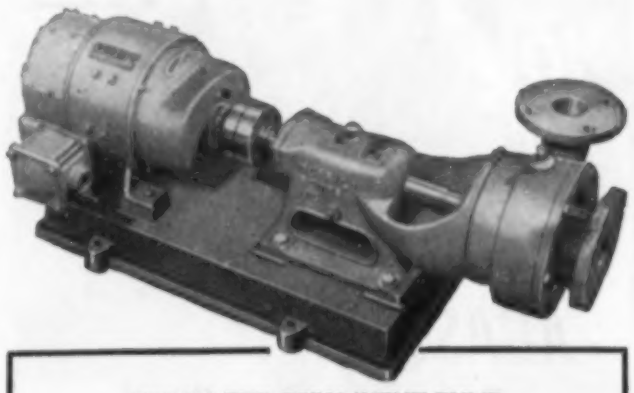
CLAYTON MANUFACTURING COMPANY
Box 550, EL MONTE, CALIFORNIA

Ask to see THIS TEST

Clayton KERRICK STEAM CLEANER

If you write maker identify as IEN - 9096

• FOR CHEMICAL LIQUIDS • FOR ZONE AIR CONDITIONING • FOR GENERAL SERVICE



HERE'S THE *PERMANENT* PUMP TO DO THE JOB AT LOWEST COST!

"Buffalo" Single Suction Type CS Pumps have oversize shafts and full ball bearings to withstand the severest strains of constant operation. This enables you to select a pump for the desired capacity, and keep maintenance costs down. Other features are enclosed impellers which do not lose initial high efficiency; interchangeability of parts and accessibility for servicing. Available in iron or most machinable alloys.

WRITE FOR BULLETIN 976-D

BUFFALO PUMPS, INC.
496 Broadway Buffalo, New York
Subsidiary of Buffalo Forge Company
Canadian Pumps Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

If you write maker identify as IEN - 9097

MUELLER BRASS CO.
600 SERIES
BEARING ALLOYS
FORGINGS • ROD • SCREW MACHINE PRODUCTS
proving their quality throughout American industry

Mueller Brass Co. "600" series bearing bronzes are lightweight, high strength copper-zinc base alloys with excellent bearing and mechanical properties, non-galling and non-seizing characteristics and good resistance to corrosion. There are six members of the "600" series . . . one for every purpose. Write today for complete information about the MUELLER BRASS CO. "600" series alloys for forgings, rod or screw machine products.

MUELLER BRASS CO. 119-A
PORT HURON 26, MICHIGAN

If you write maker identify as IEN - 9098

THE INSURANCE PREMIUMS YOU SAVE WILL PAY FOR THIS SAFETY FLOOR PLATE

When A.W. ALGRIP Abrasive Rolled Steel Floor Plate is installed in any plant, costly slipping accidents end and insurance premiums drop 'way down. ALGRIP assures non-slip foot safety in every step—even when wet or splashed with oil; gives a firm non-skid grip even on steep inclines.

Hundreds of tiny abrasive particles are impregnated *to a controlled depth of penetration* into each square foot of strong yet light weight steel plate. This exclusive ALGRIP feature provides a tough "grinding-wheel" grain that wear can't lick because heavy use only exposes new particles. And the insurance rates you save when accidents cease will pay for your ALGRIP installation.

Send today for full details on how non-slip fire-and breakage resistant ALGRIP can save money for you.

A.W. ALGRIP *Abrasive Rolled Steel Floor Plate*

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send free booklet AL-3 on savings from safety with ALGRIP.

Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as **IEN - 9099**

AGASTAT

Compact . . . Dust-Proof

TIME DELAY RELAYS

solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

Write for Bulletin. Dept. A1-92,

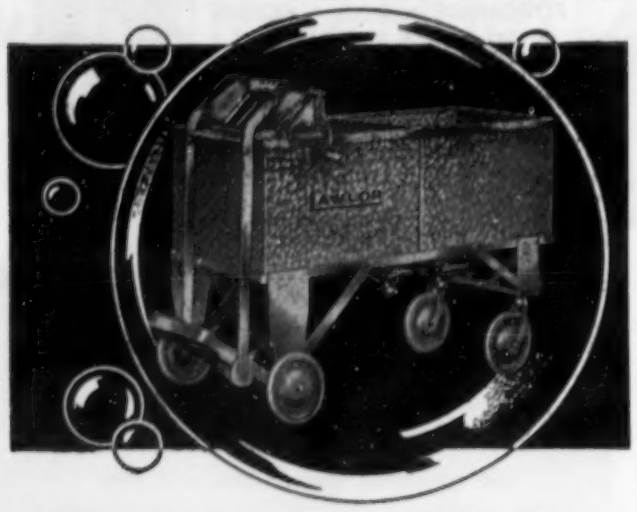
AGA

Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

If you write maker identify as **IEN - 9100**

LAWLOR MOPPING TANKS

Lead the Field in Ruggedness and Service



8 styles and sizes of all steel, acetylene welded tanks • 2 or 3 compartments • 30, 60 or 65 gallon capacities • hand or foot pressure wringers • perforated roll wringers • special drain shut-offs • hot dipped, galvanized chassis and frames • rubber tired, cadmium plated steel wheels.

Write for Catalog of Mopping Tanks, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size of floor

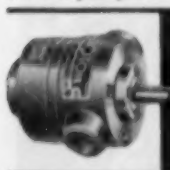
S. C. LAWLOR CO. *Quality Floor Equipment for 50 Years*
120 North Aberdeen Street • Chicago 7, Illinois

If you write maker identify as **IEN - 9101**

There's a GEROTOR *Hydraulic* PUMP

to meet your requirements!

The GEROTOR line of precision engineered hydraulic pumps is designed to fill the requirements of the majority of hydraulic equipment users. The three standard GEROTOR models cover a range of g.p.m. delivery from .4 g.p.m. to 40 g.p.m. Check the capacity tables for the pump to fill your needs.



TYPE QDB

New series of small capacity pumps . . . last word in precision engineering

DELIVERY G.P.M. — 1800 R.P.M.

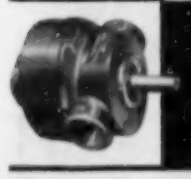
Type	Discharge Pressure P.S.I.				
	0	250	500	750	1000
QDB .4	.42	.40	.38	.35	.31
QDB .75	.84	.80	.78	.73	.66
QDB 1.5	1.67	1.62	1.57	1.50	1.42

TYPE QDH

Popular intermediate size of the Gerotor line

DELIVERY — G.P.M. AT 1200 R.P.M

Type	Discharge Pressure P.S.I.						
	0	250	500	750	1000	1200	1500
QDH 3	3.3	3.2	3.1	3.0	2.9	2.7	2.5
QDH 5	5.6	5.4	5.3	5.2	5.1	4.8	4.4
QDH 8	8.6	8.5	8.4	8.3	8.2	8.1	7.8
QDH 12	12.9	12.8	12.7	12.5	12.3	12.2	11.8



TYPE 0

When larger capacities are needed

DELIVERY — G.P.M. AT 1200 R.P.M.

Type	Discharge Pressure P.S.I.				
	0	250	500	750	1000
O-20	20.0	19.5	18.8	18.0	17.2
O-25	25.0	24.5	24.0	23.2	22.2
O-30	31.2	31.0	30.5	29.8	29.0
O-40	43.0	42.5	42.0	41.5	40.0

Whatever your needs in hydraulic pumps . . . consult the GEROTOR engineers. Write for FREE literature and information; no obligation, of course. **GEROTOR MAY CORP., P. O. Box 86, Baltimore 3, Md.**

GEROTOR **HYDRAULIC PUMPS & MOTORS**
Pneumatic Bin Evacuators
Precision Contract Mfg.

NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 0719**

DRILLING MACHINES . . Single and multiple-spindle units for drilling and tapping, ½ to 1½ in. capacity, in variable-speed, cam-feed and other designs summarized in 4-page Bulletin G-54. Edlund Machinery Co., 37 Huntington St., Dept. IEN, Cortland 44, N. Y.

If you write maker identify as **IEN - 0720**

DRIVE COMPONENT . . Torque Limiter is a slip clutch that provides overload protection on machine drives. Eleven models rate 20 to 620 ft. lb. in torque capacity. Adaptation drawings in 8-page Bulletin C-14-54. Morse Chain Co., 7601 Central Ave., Dept. IEN, Detroit 10, Mich.

If you write maker identify as **IEN - 0721**

VENTILATING DUCT . . Flexible fabric with spiral reinforcing, sizes from ½ to 10 in. id., to handle air, gas, fumes, dust, materials. Four types in 4-page "Flexflyte". Flexible Tubing Corp., Dept. IEN, Guilford, Conn.

If you write maker identify as **IEN - 0722**

ELECTRONIC PRODUCTS . . Nine germanium transistors in sealed PNP junction type and 32 germanium diodes. Bulletin G-23 has 8 pages of data charts. Radio Receptor Co., 251 W. 19th St., Dept. IEN, New York 11, N. Y.

If you write maker identify as **IEN - 0723**

FABRICATING . . Machines, tools and dies for fabricating sheet metal are presented in 96-page Catalog 154. Some of the equipment is by the company, some by others. Ward Machinery Co., 564 W. Washington, Dept. IEN, Chicago 6, Ill.

If you write maker identify as **IEN - 0724**

FASTENINGS . . Lock nut has part of the top threads deflected to grip the bolt. It is a semi-finished hexagon unit that spins on freely until these threads are reached. Bulletin, "Uni-Torque", 8 pages. MacLean-Fogg Lock Nut Co., 5535 N. Wolcott Ave., Dept. F, Chicago 40, Ill.

If you write maker identify as **IEN - 0725**

FASTENINGS . . Screw thread inserts and their use in electrical products are described in 4-page Bulletin 664 which reprints three application articles. Heli-Coil Corp., 1467 Shelter Rock Lane, Dept. IEN, Danbury, Conn.

If you write maker identify as **IEN - 0726**

FASTENINGS . . Set screws with socket, slotted, slabbed, fluted-socket heads, a variety of points, also locking set screws, cap screws, pipe plus. List prices in 28-page Catalog 19. Set Screw & Mfg. Co., 5 Main St., Dept. IEN, Bartlett, Ill.

If you write maker identify as **IEN - 0727**

FLOORS . . Non-shrink material to grout under machinery, to patch or resurface floors, to bond concrete surfaces. It contains a metallic aggregate. Instructions for use in 8-page bulletin, "Vibro-Foil." A. C. Horn Co., 43-36 Tenth St., Dept. IEN, Long Island City 1, N. Y.

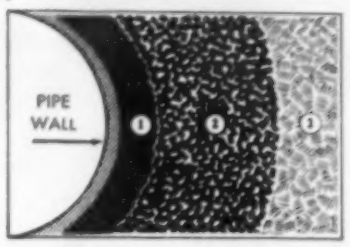
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9102**

If you write maker identify as **IEN - 9103**

GILSULATE®

the modern Triple-Zone insulation for hot underground pipes. Lowest cost per installed linear foot.



Zone 1: First line of defense against heat loss, corrosion, moisture: a dense semi-plastic core fused on by pipe's own heat.
Zone 2: Second line of defense against heat loss and water: a sintered zone of Gilsulate particles.
Zone 3: A zone of unfused Gilsulate providing final margin of thermal insulation with high load-carrying capacity.

Gilsulate granules fuse into lifetime protection on hot underground pipes; keep them insulated, water-proof, corrosion-proof, root-proof, acid/alkali-proof.

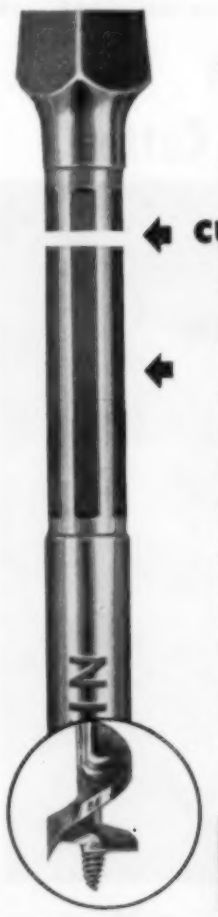
Gilsulate is easy to use:
1. Pour Gilsulate granules out of bag onto pipe.
2. Tamp down and backfill: *the job is insulated!*

Gilsulate has been tested in scores of the country's largest and most important installations. It needs no sleeves or mechanical sheaths. It requires no mixing or special handling. It can't be punctured, doesn't require removal of rocks from backfill. It can't tear or puncture pipe since it contracts and expands with the pipe.

Write for descriptive literature

AMERICAN GILSONITE COMPANY
134 West Broadway, Salt Lake City 1, Utah
or 1145 E. Jersey St., Elizabeth 4, N. J.
Affiliate of Barber Oil Corporation and Standard Oil Company of California

If you write maker identify as **IEN - 9104**



FITS BOTH BIT BRACES ELECTRIC DRILLS

CUT OFF HERE

Irwin 2-Way "Hex" Shank fits both Bit Brace and Electric Drill Chucks

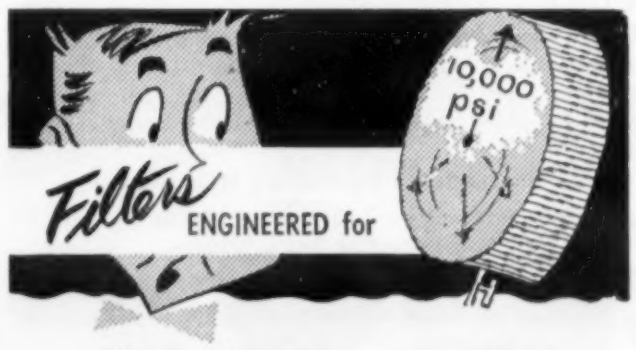
IRWIN "HEX" SHANK WOOD BITS

Use new Irwin 2-Way "Hex" Shank wood bits in Bit Brace. Remove and use in Electric Drill. **"Hex" Shank fits both—perfectly!** No wobble, no run-off. Speed up work on the job. Reduce replacement stock and handling by 50%. Sizes 4/16" to 17/16".

Call your mill supply distributor, or hardware wholesaler for details and prices. Irwin—Wilmington, Ohio.

IRWIN HEX SHANK WOOD BITS

If you write maker identify as **IEN - 9105**



High Pressure Service

Up to 10,000 PSI
Permanent Filter Element (Porous Stainless Steel or Porous Fluorocarbon)
In Line Construction
Low Pressure Drop
Corrosion resistant
All Stainless Steel
Code Construction
For Liquids and Gases

Write for Bulletin No. 20B

Another filtration engineering service of

MICRO METALLIC CORPORATION
32-B Sea Cliff Ave. Glen Cove, N. Y.

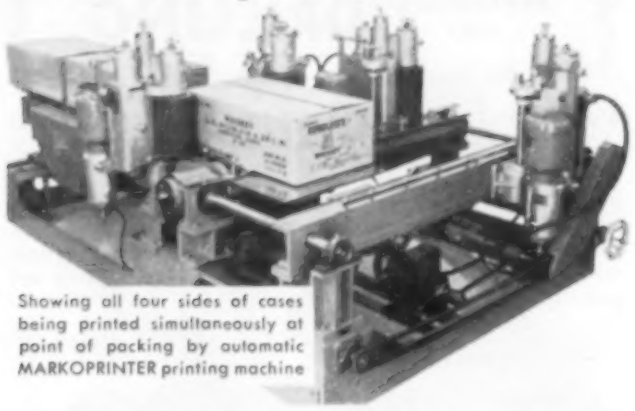
PALL

The Pall Filtration Companies

Micro Metallic Corporation | Porous Plastic Filter Co. | Aircraft Porous Media, Inc.

If you write maker identify as IEN - 9106

Production-Line Case-Printer Saves Money...Cuts Inventories



Showing all four sides of cases being printed simultaneously at point of packing by automatic MARKOPRINTER printing machine

The Gottscho MARKOPRINTER is the machine that enables quantity users of shipping cases — corrugated, fibre, wood or metal — to buy containers blank and print them *automatically* in the regular packaging or handling operation. This does away with large, costly inventories of preprinted cases and eliminates the risk of serious loss through obsolescence. It also results in lower container costs, reduced warehousing and record-keeping labor, no down-time for lack of right cases at the right time. The MARKOPRINTER adjusts readily for different case sizes; permits quick copy changes; needs no attention during operation. Models available to print from 1 to 5 sides simultaneously...also for imprinting small shelf cartons, boxes, canisters, cans.

Write for full details today

Gottscho **ADOLPH GOTTSCHO, INC.** 50 Years of Leadership

Hillside 5, N. J.

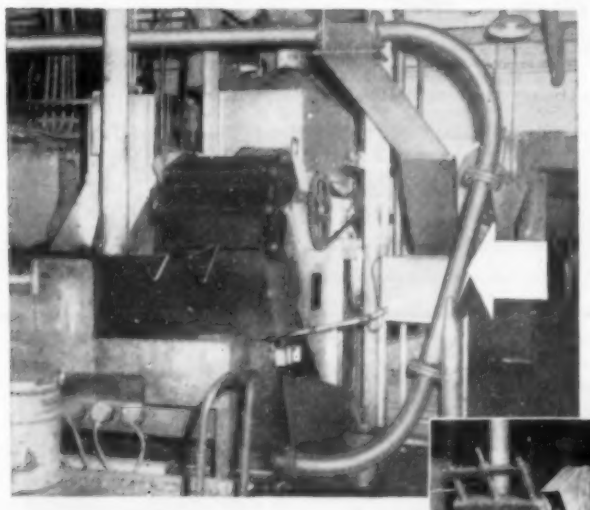
In Canada: RICHARDSON AGENCIES, LTD., Toronto & Montreal

If you write maker identify as IEN - 9107

HERE'S HELP!

HANDLE "HOT JOBS" with Hapman TUBULAR CONVEYORS

and save money too!



Chip-handling conveyor will remove chips from coolant.

Cross section showing Sealed-Pin Chain and Neoprene Flights.

THREE MAN-DAYS AND EIGHT HOURS of valuable production time every month were formerly lost in removing scale from the quench tank at Bower Roller Bearing Co., Detroit. An unpleasant job, too!

NOW . . . A HAPMAN TUBULAR CONVEYOR removes the scale *as it collects* . . . takes *no* labor or production time . . . gives *big savings!*

HAPMAN'S UNIQUE, *patented* "Sealed-Pin Chain" construction is highly resistant to abrasive and corrosive action . . . gives greater chain life . . . cuts operating costs. Solid, *tubular* design is liquid-tight.

LET HAPMAN TUBULAR CONVEYORS handle *your* "hot jobs" . . . save *you* money . . . boost *your* efficiency. Get all the details.

WRITE TODAY FOR BULLETIN IN-854

Hapman CONVEYORS, INC.
DIVISION HAPMAN DUTTON COMPANY
KALAMAZOO MICHIGAN

If you write maker identify as IEN - 9109

Meter - Electric instrument for switchboard and panel application

Source: WESTON ELECTRICAL INSTRUMENT CORP.
614 Frelinghuysen Ave., Dept. IEN, Newark 5, N. J.

Circular A-35-C

Clear plastic front and "in-line" pointer and dial characterize the construction of this new Group-610 electric meter. The plastic front admits light to the dial at the sides, top and front to eliminate need for internal illumination under normal conditions. The "in-line" pointer and dial, on which the scale is raised in plane with the pointer tip, eliminate paralax error and permit accurate reading from an angle.

The lower portion of the plastic front is normally black but other colors can be provided where color coding is required. The instrument is available in types and ranges to meet any switchboard or special requirement. The scale measures 3½ in. in length. Rated accuracy is within 1 per cent of scale value. Overall dimensions are 4 by 4½ inches.

If you write maker identify as IEN - 9110

Welding - Arc electrode for bronze fabrication and repair

Source: ALLOY RODS COMPANY
5141 Lincoln Highway W, Dept. IEN, York, Pa.

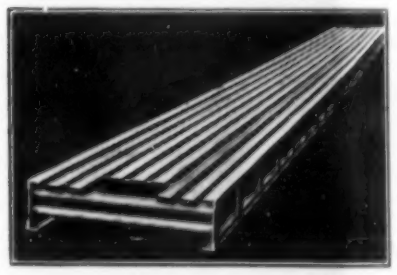
Technical data upon request

Bronze-Arc Mn trade names a new electrode developed to fabricate and repair manganese bronze without the need for high pre-heat temperature. The electrode produces a weld that combines strength, ductility and soundness for physical weld properties equal to or better than the base material and with basically the same chemical combination. Typical examples of work are bronze castings such as gears and pump housings, impellers, mixer beaters, valves.

If you write maker identify as IEN - 9111

Scaffold - Aluminum swing stage made in specified lengths to 28 feet

Source: LOUISVILLE LADDER CO.
1101 W. Oak St., Dept. IEN, Louisville 10, Ky.



Light and rigid

Double rung assemblies at each end and at two intermediate points through the length of the longest units combine with 5-in. side rail depth to characterize this improved design in the company's line of aluminum swing stages. Shorter units in the line are made with single rung assemblies and 4-in. side rails. Standard width is 20 in., can be specified to a total of 30 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9112

DERBY "152"

A DERBY FIRST
Stainless steel cut-off blade, guaranteed for life of machine.

MOST TALKED ABOUT GUMMED TAPE DISPENSER ON THE MARKET!

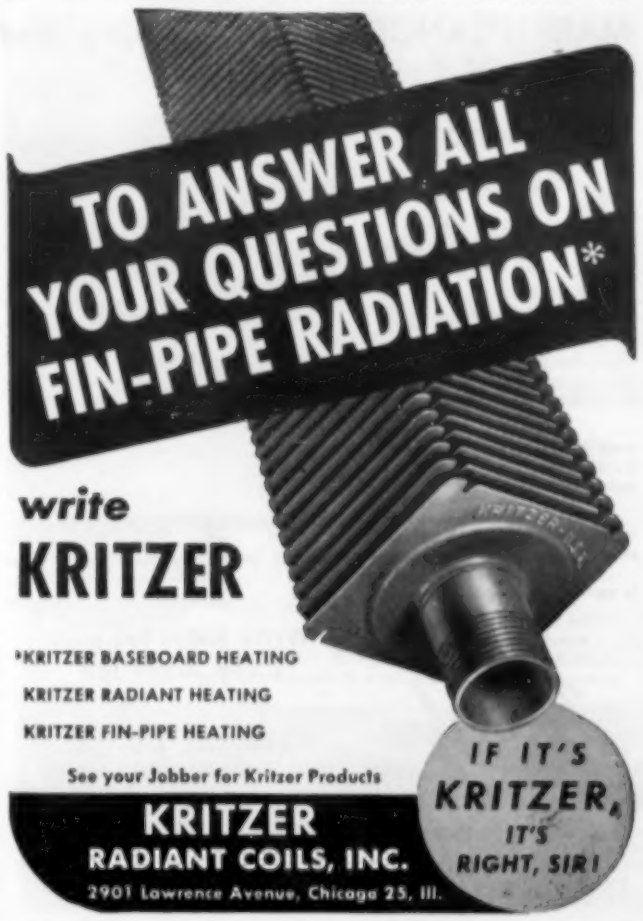
Derby spent 2 years designing, building and testing the fabulous Super "152". It's a rugged, efficient, gummed tape dispenser with so many big machine features, so many unusual Derby exclusives, that its low price is truly sensational! Dispenses 1" to 3" width tapes in predetermined lengths up to 30".

See your dealer or write Dept. IF

DERBY SEALERS INC. Derby, Conn.

If you write maker identify as IEN - 9113

TO ANSWER ALL YOUR QUESTIONS ON FIN-PIPE RADIATION*



write KRITZER

*KRITZER BASEBOARD HEATING
KRITZER RADIANT HEATING
KRITZER FIN-PIPE HEATING

See your Jobber for Kritzer Products

KRITZER RADIANT COILS, INC.
2901 Lawrence Avenue, Chicago 25, Ill.

IF IT'S KRITZER, IT'S RIGHT, SIR!

If you write maker identify as IEN - 9114

NEW SAFETY FEATURE

Pop-out ends accidents

A special feature of the new Rapistan Live Roller Conveyor is the pop-out action of the carrier rollers. This prevents injury to fingers and hands, accidentally thrust into unit. Designed to meet the need for a rugged power unit to be used with rough or heavy items, the Rapistan Live Roller is excellent for sweep-on-and-off operations. A motor driven belt actuates rollers available in widths from 12" to 36". For complete information on this new, heavy-duty unit with exclusive safety features, write direct to:

The RAPIDS-STANDARD CO., Inc.
230 Rapistan Building, Grand Rapids 2, Michigan

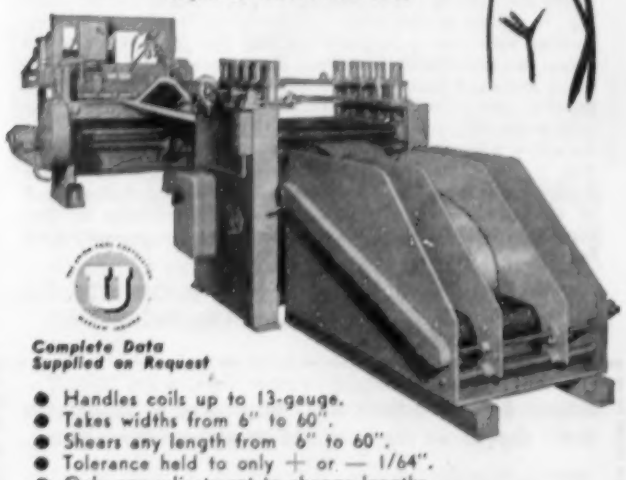
Rapistan BETTER CONVEYING EQUIPMENT

If you write maker identify as IEN - 9115

WITH ONLY ONE OPERATOR THIS UNION MACHINE

- DE-COILS
- LEVELS
- SHEARS
- STACKS

CUTS LABOR COSTS
AUTOMATICALLY
CUTS MATERIAL COSTS
Buy in coils and cut sheet lengths as needed. No delay.



Complete Data Supplied on Request

- Handles coils up to 13-gauge.
- Takes widths from 6" to 60".
- Shears any length from 6" to 60".
- Tolerance held to only + or — 1/64".
- Only one adjustment to change lengths.
- Speeds to 150 l.f.p.m. depending on lengths cut.
- Neatly stacks sheared pieces automatically.
- Will handle steel, aluminum, etc.

UNION TOOL CORP.
320 E. MARKET ST., WARSAW, IND., U. S. A.

USERS SAY UNION CUTS COSTS, SPEEDS PRODUCTION

If you write maker identify as **IEN - 9116**

MAINTENANCE CONTROL *Simplified*

NEW Illustrated Bulletin on request

Step-by-step procedure providing positive control . . . with little clerical work

. . . Maintenance Request and/or Maintenance Order . . . for all maintenance jobs . . . Preventive maintenance, repairs, new work.

. . . Maintenance Supervisor's Order Control . . . progress or follow-up records . . . information for maintenance reports, etc.

. . . Scheduling and Job Assignment . . . assignment and instructions to Craft chiefs and foremen . . . by Craft chiefs and foremen to workers and crews.

. . . Job Costs, daily and final.
. . . Material Control.
. . . Tool Crib Control.

McCaskey procedures illustrated and described in this NEW folder are readily adaptable to your individual requirements

Write today for your Copy A-699 IEN

McCaskey INDUSTRIAL CONTROLS
PRODUCTION · INVENTORY · TOOLS · COSTS · MAINTENANCE
THE McCASKEY REGISTER DIV.,
Victor Adding Machine Co.
ALLIANCE, OHIO
Galt, Canada Watford, England

If you write maker identify as **IEN - 9117**

NEW IDEA Sweeping American Industry

SBS WATERLESS WASH-STATION "Brings the Washroom to the Worker"

SBS Waterless Washstation Can Cut Costs, Save Money For You

American industry has a "new look" . . . along production lines . . . in critical trouble spots . . . wherever hard-to-remove industrial soils exist . . . you'll see SBS Waterless Washstations using famous SBS-30 Waterless Skin Cleanser. Proved by 6 years industrial usage, SBS-30 is unchallenged in its ability to SAFELY remove embedded grease, grime, paint, asphalt and most other stubborn soils — WITHOUT WATER.

Its safety has won the approval of some of the largest industrial hygiene and medical departments. Companies whose names you'd recognize immediately have had conclusive proof of the money-saving, production-increasing abilities of SBS Waterless Washstations. Find out the story for yourself, send for complete details.

SBS SUGAR BEET PRODUCTS CO. SAGINAW, MICHIGAN

Sugar Beet Products Co., Saginaw 8, Michigan
SEND details on the new SBS Waterless Washstation.

Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State_____

NEW LITERATURE —*Continued*

If you write maker identify as **IEN - 0728**

FLOORS . . Masterplate DPS applies to freshly-floated concrete, produces a static-disseminating spark-resistant surface. Bulletin 38, 12 pages. Master Builders Co., 7016 Euclid Ave., Dept. IEN, Cleveland 3, Ohio

If you write maker identify as **IEN - 0729**

GEARS . . Instrument-type stock gears from 48 to 80 diametral pitch and with 20 to 100 teeth. "Dynaco Gear Folder", 8 pages, also presents design kits for experimental use. Dynamic Co., Dept. IEN, Amityville, N. Y.

If you write maker identify as **IEN - 0730**

GRINDING TOOLS . . Portable electric units operate at speeds to 45,000 rpm. with mounted wheels and rotary files. Fixtures and accessories suit them for use as speed lathes, machine quills. Catalog FGH-1, 12 pages. Precise Products Corp., 1328 Clark St., Dept. IEN, Racine, Wis.

If you write maker identify as **IEN - 0731**

GRINDING WHEELS . . Standard units in vitrified and resinoid bonds, mounted wheels, fiber-reinforced flexible wheels, cut-off wheels, portable grinders. Catalog, 76 pages, includes list prices. Chicago Wheel & Mfg. Co., 1101 W. Monroe St., Dept. IEN, Chicago 7, Ill.

If you write maker identify as **IEN - 0732**

GRINDING WHEELS . . What tool to pick for the job at hand is described for abrasive wheels and points, carbide and steel cutters, in new 40-page Catalog, with advantages and disadvantages. List prices are included. Metal Removal Co., 1546 N. Orleans St., Dept. IEN, Chicago 10, Ill.

If you write maker identify as **IEN - 0733**

HANDLING . . Containers of hard vulcanized fibre include cans, boxes, trays, baskets and hand trucks. Pocket Catalog 54, 24 pages. National Vulcanized Fibre Co., Maryland Ave. & Beech St., Dept. IEN, Wilmington 99, Del.

If you write maker identify as **IEN - 0734**

HOIST . . Ratchet-lever design rated from ¾ to 15 ton comes in roller-chain and coil-chain models. Applications include vertical lift, horizontal pull. "Safety Pull Hoist", 8 pages. Coffing Hoist Co., 800 Walter St., Dept. IEN, Danville, Ill.

If you write maker identify as **IEN - 0735**

HOSE FITTINGS . . Quick-connecting swivel-action hose couplings in standard and check-valve types, ¼ to 12 inches. Pressure ratings and standard assemblies in 16-page bulletin, "Quick-Seal Coupling." Titeflex Inc., 500 Frelinghuysen Ave., Dept. IEN, Newark 5, N. J.

If you write maker identify as **IEN - 0736**

ELECTRICAL INSULATING . . How to apply by dip, brush, spray, vacuum-pressure is part of the information presented in new 36-page "Insulating Varnish" catalog. Included are charts on solvent addition, conversions. Irvington Varnish & Insulator Co., 6 Argyle Terrace, Dept. IEN, Irvington 11, N. J.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as **IEN - 9119**

HOW TO USE DRY TYPE TRANSFORMERS PROFITABLY IN YOUR PLANT

Planning the electrical system of your plant with Acme Electric dry type transformers can save you money, material and time. How to eliminate double wiring, provide 3-wire secondary circuits, insulate circuits or balance voltage are only a few of the many ways you can use Acme Electric dry type transformers. Write for the folder DT 195 containing ideas and wiring diagrams. Acme Electric transformers are available in single phase sizes from 1/10 thru 500 KVA; three phase from 3 thru 750 KVA.

ACME ELECTRIC CORPORATION
MAIN PLANT: 268 WATER STREET · CUBA, N. Y.
West Coast Engineering Laboratories: 1375 W. Jefferson Blvd., Los Angeles, Cal.
In Canada: Acme Electric Corp. Ltd. · 50 North Line Rd. · Toronto, Ont.

Acme ACME Electric TRANSFORMERS

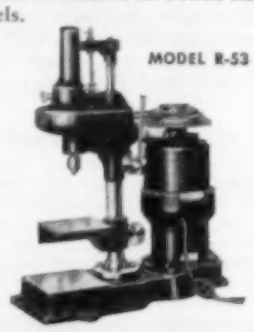
If you write maker identify as **IEN - 9120**

DESIGNED FOR HIGH SPEED PRODUCTION LINE DRILLING

STURDILY BUILT...BUT SO SENSITIVE THAT OPERATORS ACTUALLY "FEEL" DRILL PROGRESS...SLASHES BREAKAGE COSTS

An accurate, precision drill for handling all types of work from No. 80 to ¼". Heat treated and ground spindle guided in vertical quill, supported by annular bearings to eliminate belt pull. Rugged thrust bearings carry full drilling load. Table heights, spindle travel, speeds quickly adjusted. Available in bench and pedestal and multiple spindle models.

SPECIFICATIONS
Capacity: No. 80 to ¼"
Speeds: 750 to 6000 RPM
Max. Spindle Travel: 2¼"
Drills to Center of 6" circle
Base: 10" x 20"
Height: 24½"
Net Wt.: 108 lbs.



MODEL R-53

WRITE FOR LITERATURE

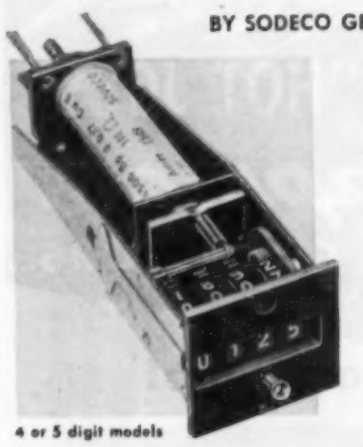
HIGH SPEED HAMMER CO., INC.
Manufacturers of HIGH SPEED Riveting Hammers, Staking Machines, Sensitive Drilling Machines and Wire Strippers
316 W. NORTON ST., ROCHESTER 21, N. Y.

If you write maker identify as **IEN - 9121**

the Counter

YOU'VE BEEN WAITING FOR!

BY SODECO GENÈVE



4 or 5 digit models

INSTANTANEOUS RESET...to zero. Single-stroke lever action.

COMPACT...flush-mounting plate measures only 1-5/16" x 1-3/16".

FAST...standard models count up to 10 impulses/sec. (Special models available with speeds up to 25 impulses/sec.).

TELLS AT A GLANCE...when coil is energized. Half numbers indicate this condition.

ACCURATE · DEPENDABLE · FLUSH MOUNTING

Write for Bulletin 22

LANDIS & GYR, INC.
45 West 45th Street · New York 36, N. Y.

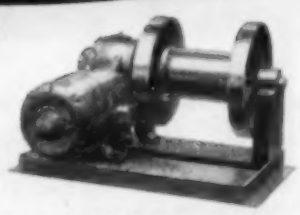
SODECO

If you write maker identify as **IEN - 9122**

KING ELECTRIC HOISTS

✓ PUSH BUTTON CONTROL

Push button can be at hoist or remote from hoist. Electric brake on motor. Ideal for merchandise elevators.



✓ MANUALLY CONTROLLED

Clutch and brake operated by hand lever. Spool runs free on ball bearings so empty container or platform can be quickly lowered.

✓ KING CAR PULLERS

Furnished with vertical spool (as shown) or horizontal spool. For pulling and spotting freight cars, barges, kiln cars, etc., and for many pulling and hoisting jobs. Ask for Bulletin 550.

Get a Quote from King

"Let Us Share Your Electric Hoist Problems."

King MANUFACTURING CORP.
3167 W. Chicago Ave. · Chicago 22, Ill.

If you write maker identify as IEN - 9123

any way you look at it... fast, cool-cutting is in the bag!

A new protective plastic bag for factory-fresh Simonds toolroom wheels every time you order. Ideal for high carbon, high chrome and other toolroom steels. Order from your Simonds distributor.

with SIMONDS ABRASIVE CO. W Borolon GRINDING WHEELS

SIMONDS ABRASIVE COMPANY
Philadelphia 37, Pa.
Div. of Simonds Saw and Steel Co.
DISTRIBUTORS IN PRINCIPAL CITIES
BRANCH WAREHOUSES: Boston, Detroit, Chicago, Portland, San Francisco

If you write maker identify as IEN - 9124

PRICES SLASHED UP TO 40% ON

New LABELON PRINTED FLATBACK TAPE

TRUE WHITE
PRECISION PRINTED
SELF-STICKING • ADHERES TIGHTLY
STRIPS OFF CLEANLY

LABELON Printed FLATBACK
The new, low-cost tape for
• SEALING
• HOLDING
• BUNDLING
• MASKING
• INSTRUCTING
• IDENTIFYING
• WARNING
• INSPECTING

Choice of Widths, Lengths, Message

LABELON'S new printed, pressure-sensitive Flatback Tape looks better, sticks better, and COSTS UP TO 40% LESS! Cleaner TRUE WHITE surface. Can be written on with pen or pencil. Wide variety of widths and roll lengths, with your message, design, trademark, symbol, etc. printed in choice of colors.

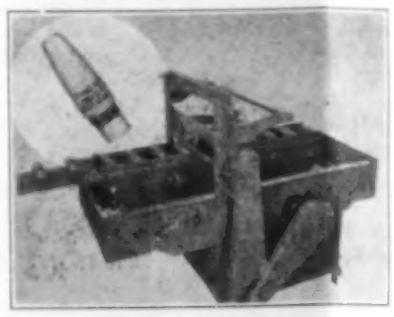
Write today for prices and FREE SAMPLES
Dept. IEN-8

LABELON TAPE CO., Inc.
450 Atlantic Ave., Rochester 9, N.Y.

If you write maker identify as IEN - 9126

Marking - Conveyor machine rolls work pieces under inked type

Source: ADOLPH GOTTSCHO INCORPORATED
6-D Terminal Road, Dept. IEN, Hillside 5, N. J.



Employs rubber type

Auto-Cylindaprinter is a new marking machine for application in a production line to receive cylindrical work, print identification on it and discharge the work without need for attention on the operator's part. Identification, lot numbers, code dates can be printed on straight or tapered cylindrical work pieces ranging from 1 to 12 in. in diameter and from 1½ to 48 in. in length. The machine employs the company's instant drying ink for printing speed to 100 units per minute without danger of smudging. The type or assembled dies permit quick copy change.

If you write maker identify as IEN - 9127

Painting - Transparent liquid to protect freshly painted surfaces

Source: BOOKER-COOPER INCORPORATED
6940 Farmdale, Dept. IEN, North Hollywood, Calif.

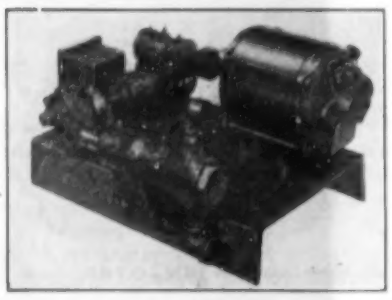
Technical data upon request

Violite is a new transparent liquid material containing ingredients that minimize the effect of ultra-violet light on a newly painted surface and also protect against salt laden atmospheres. The material is applied as the final coat over a painted surface. The liquid film hardens upon evaporation of its solvent. It is dust free a few minutes after application. It can be sprayed, brushed or dipped. Packaging is in quarts and gallons at list prices of about $3 and $8.

If you write maker identify as IEN - 9128

Feeding - Reciprocating pump proportions additive to main line flow

Source: MILTON ROY COMPANY
1300 E. Mermaid Lane, Dept. IEN, Phila. 18, Pa.



Details on request

Capacity ranges from 1 pt. to 1,350 gph. against discharge pressure to 50,000 lb. for this new motor driven clutch controlled electrically actuated feed pump. A mechanical single revolution clutch permits one stroke of the pump in response to an electrical signal to feed an additive in proportion to a main flow. The signal can be transmitted by a timer, electrical contacts or a positive displacement meter.

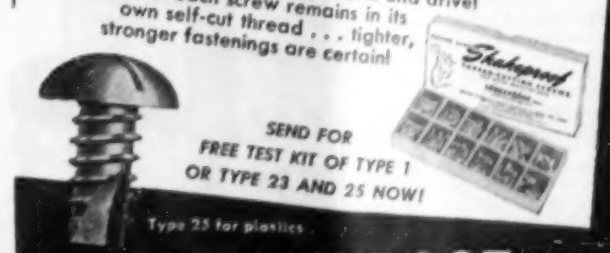
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9129

Type 1 for steel
Type 23 for die castings

FREE!
TEST OFFER PROVES
NO TAPPING WITH
SHAKEPROOF
T. M. REG. U. S. PAT. OFF.
THREAD-CUTTING SCREWS

They actually cut their own mating thread in metal or plastic . . . just drill and drive! Because each screw remains in its own self-cut thread . . . tighter, stronger fastenings are certain!



SEND FOR FREE TEST KIT OF TYPE 1 OR TYPE 23 AND 25 NOW!

Type 25 for plastics

SHAKEPROOF
"Fastening Headquarters"
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois
Offices in principal cities

If you write maker identify as IEN - 9130

For Dependable, High-Pressure Connections

High-pressure connections are the best electrical connections. They are also the best mechanical connections because tests show that they have better ability to stay tight — are trouble-free once installed.

All connectors in the famous BLACKBURN Hi-Strength Line produce high pressure connections. Also, they are priced right to give you low cost connections that you can depend upon . . . Be sure to specify BLACKBURN!

SEND FOR CATALOG
JASPER BLACKBURN CORPORATION
35 Madison St. • St. Louis 6, Mo. • MA. 1-2821

If you write maker identify as IEN - 9131

Send for your FREE copy, today

Graybar ELECTRICIANS' TOOL CATALOG

This is it . . . one of the most comprehensive electricians' tool catalogs ever published. 64 pages covering prices, specifications and ordering information on hand tools, motor-driven tools, and miscellaneous supplies for every electrical construction or maintenance need. Be sure to get your copy — find out for yourself how a single source for tools saves you time and purchasing paperwork.

And, for other electrical requirements, too, just contact your local Graybar Representative — he can furnish prompt information on any of the more than 100,000 electrical items we distribute. *Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.*

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

431-128

If you write maker identify as IEN - 9132

MILLIONS OF GALLONS OF LIQUIDS ARE ACCURATELY MEASURED EACH YEAR BY THESE . . .

. . . BOWSER XACTO METERS

Wherever precision measurement is essential to assure constant uniformity of product—control costs, or simplify handling of liquids—there you will usually find Xacto meters on the job.

Right now—in many plants of all types—Bowser Xactos are efficiently handling 662 different liquids.

It will pay you to consult with your nearby Bowser representative.

BOWSER, INC.
1338 Creighton Ave., Fort Wayne 2, Ind.
BOWSER
Regional Offices • Atlanta • Chicago
Cleveland • Dallas • Kansas City • New York
San Francisco • Washington, D. C. • Hamilton, Ontario

If you write maker identify as IEN - 9133

COLOR FILL

HUB-CAPS, depressed DESIGNS, LETTERS or NUMBERS with the —

Reg. U. S. Pat. Off.
ACROPRINTER

IN OPERATION —
With an ACROPRENE die this hand operated unit picks up ink, paint or enamel and deposits it in depressed or on raised surfaces — the easy way. POWER OPERATED MODELS BUILT TO SUIT.

Write for details and prices.

ACROMARK
THE ACROMARK COMPANY
7 MORRELL ST., ELIZABETH, NEW JERSEY

If you write maker identify as IEN - 9134

For Man-Cooling!

Coppus Airplane Type Heat Killer® cools large areas — restores efficiency

HEAT KILLER on the job in drop forge plant.

Steel mills, drop forge plants, foundries and other plants with hot working conditions find this Coppus Heat Killer increases worker efficiency . . . at reasonable cost. *A single fan cools large areas.*

Other types also available for cooling furnaces, electrical equipment, for driving out gases, drying out products, drawing out fumes. Write now for detailed information. COPPUS ENGINEERING CORPORATION, 148 PARK AVENUE, WORCESTER 2, MASSACHUSETTS.

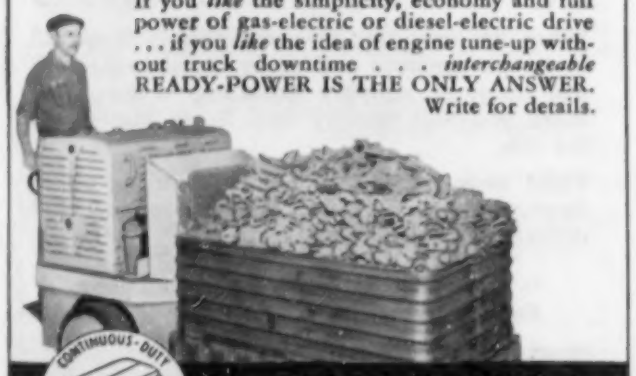
ANOTHER COPPUS "BLUE RIBBON" PRODUCT

If you write maker identify as IEN - 9135

Removable Ready-Power Units give you off-the-truck maintenance

Keep trucks *on the job!*

If you *like* the simplicity, economy and full power of gas-electric or diesel-electric drive . . . if you *like* the idea of engine tune-up without truck downtime . . . *interchangeable* READY-POWER IS THE ONLY ANSWER. Write for details.



CONTINUOUS-DUTY POWER UNITS

The READY-POWER Co.
3830 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

NEW LITERATURE —*Continued*

If you write maker identify as IEN - 0737

THERMAL INSULATING . . Pipe covering of 85 per cent magnesia for service to 600 deg. F. How to specify it and heat-transmission data in 12-page Bulletin IN-143A. Johns-Manville, 22 E. 40th St., Dept. IEN, New York 16, N. Y.

If you write maker identify as IEN - 0738

VIBRATION ISOLATION . . Knit wire mesh forms the resilient load-carrying member of the company's Metal-L-Flex vibration and shock mounts for industrial machinery. Examples are given in 4-page Bulletin 850. Robinson Aviation Inc., Teterboro Airport, Dept. IEN, Teterboro, N. J.

If you write maker identify as IEN - 0739

LAYOUT . . Kits of materials for making statistical charts, organization and flow charts, office layouts. Each has adhesive-backed printed tapes and symbols. Bulletin, 16 pages. Chart-Pak Inc., 100 Lincoln Ave., Dept. IEN, Stamford, Conn.

If you write maker identify as IEN - 0740

MARKING . . Self-sticking pipe-marking labels adhere over a range from minus 300 to plus 300 deg. F. They are available for some 1,000 products from Acetic Acid to White Water. Stock list in 6-page Bulletin 135-B. W. H. Brady Co., 727 W. Glendale Ave., Dept. IEN, Milwaukee 12, Wis.

If you write maker identify as IEN - 0741

MELTING . . Cupolas, reverberatory furnaces, ladles, charging equipment, air-pollution control equipment, foundry instruments, summarized in 28-page Bulletin J-51. Grindle Corp., 16231 Turner Ave., Dept. IEN, Harvey, Ill.

If you write maker identify as IEN - 0742

EXPANDED METAL . . Standard and flattened designs for consumer products, machine parts, guards, shelves, treads, enclosures. Sizes, ratings in 28-page Catalog 502-EM. Penn Metal Co., 205 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 0743

ELECTRIC MOTORS . . Squirrel-cage induction motors from 1 to 200 hp. are presented in selection tables by existing and new NEMA frame sizes. Bulletin B-2102, "Motor Selector", 12 pages. Reliance Electric & Engineering Co., 1088 Ivanhoe Road, Dept. IEN, Cleveland 10, Ohio

If you write maker identify as IEN - 0744

PACKINGS . . Teflon plastic is employed in Chemiseal valve and pump packings. Bulletin TP-1053, 12 pages, just released, covers V, wedge, cup and cone, pump rings. U. S. Gasket Co., Box 486, Dept. IEN, Camden 1, N. J.

If you write maker identify as IEN - 0745

SPRAY PAINTING . . Catalog 956, 76 pages, has data on some 1,100 products including spray guns, cups and tanks, separators, compressors, booths, fans, automatic machines, with 8 pages on nozzle selection. Letterhead request, please. Binks Mfg. Co., 3122 Carroll Ave., Dept. IEN, Chicago 12, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9136

parts like these

Indicating pointer — 3D2 aluminum to 24S-T.

are easy to weld with

Self threading needle — full-tempered steel.

RAYTHEON WELDPOWER®

The delicate job of joining two parts of a tempered steel self-threading sewing needle — or positioning the indicating pointer to its hub — is no trouble at all for a Raytheon Weldpower Unit. Operators can be trained in a matter of hours to turn out strong, clean welds — even on difficult or "impossible" jobs — on a production basis. Find out about this new, economical method of joining ferrous, non-ferrous or dissimilar metals. Send samples or write for details. Address Dept. 6120-IN-8.

Raytheon Condenser Weldpower Control Units are available in three sizes and with appropriate Weldpower Heads.

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 589 FIFTH AVENUE, NEW YORK CITY

If you write maker identify as IEN - 9137

PORTABLE!
PRACTICAL!
PROFITABLE!

Union Special SUSPENDED HEAD
BAG CLOSING MACHINES

Portability, versatility, and simplicity of operation make Union Special Suspended Head Machines ideal for all-around bag closing operations in small plants, and well-suited for utility or stand-by duty in large plants. Users have found that machines can be used to produce neat, strong closures on virtually all types of paper or cloth bags. Initial cost is low; installation is simple and inexpensive. You can hang them up any place and go to work!

Send for this NEW BULLETIN!

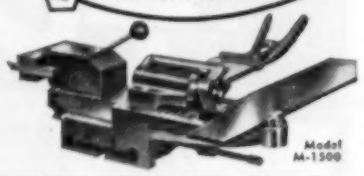
Get your copy of Bulletin No. 200 containing illustrations and helpful data charts for the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 410 N. Franklin St., Chicago 10, Ill.

If you write maker identify as IEN - 9138

Precision DUPLICATING on ANY Engine or Turret LATHE

Lehigh TRACER-TOOL
PROFILE-TRACING LATHE ATTACHMENT

Time and money saver for short or production runs — on any metal



Model M-1500

PROVEN IN SHOPS OF EVERY SIZE

See our catalog and engineering sheets illustrating unlimited variety of turning, facing, boring, grinding and Bullard operations performed quickly and accurately with this low cost tool. No complicated hydraulic or electronic controls. Requires no permanent lathe alterations. Uses simple, easily made templates. Models to fit lathes 9" to 24" and larger.

AIR CONTROL DIVISION OF
Lehigh Foundries, Inc.
1505 LEHIGH DRIVE, EASTON, PA.
Mfrs. of LEHIGH Air Valves, Air Cylinders, Air Hoists, Air Motors
West Coast Distributor: CAMPBELL CONTOUR ATTACHMENT CO. 1320 W. Esther Street, Long Beach, Cal.

If you write maker identify as IEN - 9139

To Keep Up To Date . . .

on new developments in Actionflex fiberglas-silicone laminated hose for aircraft, start your file now with this new, basic portfolio of engineering and product bulletins. It will be sent to you by return mail and future bulletins will be forwarded automatically.

If you write maker identify as IEN - 9140

Wickwire rope slings are offered in both braided and single part construction to meet a wide variety of service requirements.

For additional information write to Wire Rope sales office, Palmer, Mass.

WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

2015

If you write maker identify as IEN - 9141

NEW

greatest advance in steel shelving in 20 years

BORROUGHS
UNITIZED *flexi
STEEL SHELVING

***every unit is a unit within itself!**

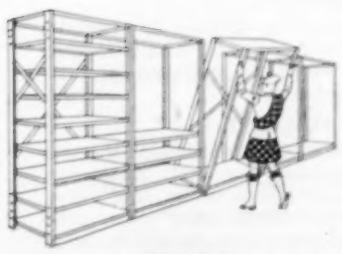
NEW simplicity and NEW features make Borroughs Steel Shelving the greatest "shelf buy" on the market. This is a fact and not conversation. Shelves can be adjusted without disturbing shelves in adjoining units . . no tricky tools or gadgets are needed . . see illustrations 1-2-3.

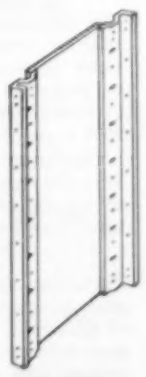
Insert SHELF SUPPORT BRACKET —no fumbling with studs, bolts, nuts or lock washers.

Tilt Shelf into SUPPORT BRACKET —and you're finished . . shelf is now ready for loading.

If you desire to lock shelf, simply **Press Shelf Lock into Position**—a slight hammer tap and it's locked in place.

NEW!
Borroughs shaped post gives added strength.





NEW!
Any unit can be moved without disturbing other units.

NEW!
1-piece closed uprights—no bolts—saves erection time.

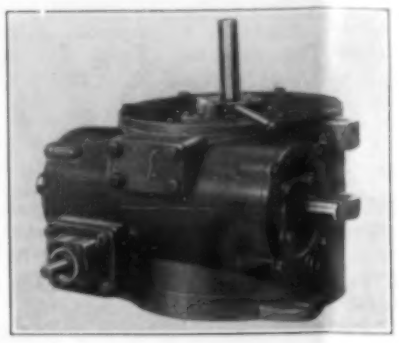
send for Catalog

BORROUGHS MANUFACTURING COMPANY
A SUBSIDIARY OF AMERICAN METAL PRODUCTS COMPANY OF DETROIT
3002 NORTH BURDICK amp KALAMAZOO, MICHIGAN

If you write maker identify as IEN - 9143

Indexing - Cylindrical cam rotates vertical shaft in increments

Source: STANDARD TOOL & MFG. CO.
740 Schuyler Ave., Dept. IEN, Lyndhurst, N. J.



Bulletin 12

Illustrated is new design of the cam operated indexing drive, previously described IEN-7197-49. Index increments, totaling 8, 12, 16 or 20, can be obtained during a complete revolution of the vertical shaft. This shaft can extend from the top or bottom. It measures 1 in. in diameter and has a ¼-in. keyway.

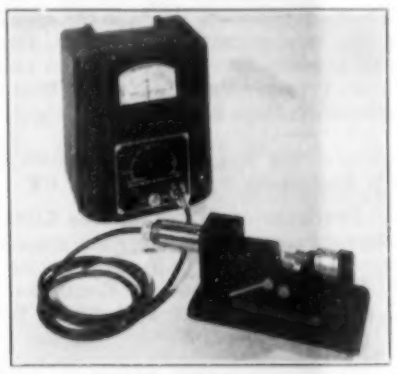
The assembly is intended to mount in a complete machine with a driving motor belt connected to a sheave on the small shaft shown at the bottom left hand end. The shaft on which the cam is mounted is driven by worm and gear connection to the input. It can be extended from the housing to operate auxiliary drives or other production devices. Work, held in fixtures, can be brought around into position for operations such as drilling, milling, soldering, assembling.

The rotating shafts are mounted on tapered roller bearings. Overall dimensions are 17 by 16½ by 13¾ inches. Indexing action takes place during 120 deg. of rotation of the cam shaft. The remaining 240 deg. is employed for dwell during which time the shaft is locked in position.

If you write maker identify as IEN - 9144

Gage - Electronic micrometer reads over and under master dimension

Source: BROWN & SHARPE MFG. COMPANY
235 Promenade St., Dept. IEN, Providence 1, R. I.



Precision plus

New assembly of the company's standard indicating bench micrometer with a gage head cartridge and the company's standard electronic amplifier provides a means to measure deviation from a master setting in 0.00001-in. steps. A frictionless member, supported by parallel reeds, transmits motion from the anvil to the cartridge. When the tool is used for extremely fine measurements, its setting should be made to Johansson blocks or other precision gages.

A retracting lever spreads the measuring points so work can be placed between them and removed quickly. The micrometer screw clamps in position. A small table, adjustable in height, provides support for the work. Measuring pressure is adjustable from 3 oz. to 2½ lb. when the instrument is used at 0.0001-in. sensitivity. Magnification is continuously variable from 1,800 to 18,000 times. Typical applications are in measuring fine magnet wire, small screw machine parts, pivots.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9145

STEINEN

SPRAY NOZZLES
for Industry

Air Conditioning
Aerating Water
Degreasing
Fruit Crop Washing
Wax Coating
Hot Asphalt Spraying
Humidifying
Industrial Washers
Pest Control
Oil Burners
Aircraft
Spray Drying

Our engineering ability and precision craftsmen are prepared to develop custom nozzles to meet any special application requirements.

ESTABLISHED 1907
STEINEN
WM. STEINEN MFG. CO.
51 Bruen Street, Newark 5, N. J.

If you write maker identify as IEN - 9146

A Complete Bushing Guide

FOR YOUR ENGINEERING AND PURCHASING FILES

Everything you need to know about Drill Jig Bushings. This catalog pictures and describes A.S.A. standard bushings. Gives helpful suggestions to purchasers and designers, lists hundreds of Ex-Cell-O bushings available from stock. Makes ordering quick and easy.

Write Ex-Cell-O for this Bushing Guide—as many as you'll need.

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN
54-19 XLO

If you write maker identify as IEN - 9147

New... Air Drill World's Smallest

It's Really Amazing!

- 3/16" HEAVY DUTY DRILLING
- NEARLY 1/4 H.P. . . . STALLPROOF
- 1/4" LIGHT DUTY DRILLING
- WEIGHS LESS THAN 1½ LBS.
- USES 38% LESS AIR

Highest precision construction makes this drill revolutionary!

Write ARO or see your ARO distributor.

THE ARO EQUIPMENT CORP., BRYAN, OHIO
Offices in All Principal Cities
In Canada—Aro Equipment of Canada, Ltd., Toronto, Ont.

ARO
AIR TOOLS
Also . . . AIR HOISTS . . . LUBE EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

If you write maker identify as IEN - 9148

O. D. grinding customers praise G Bond wheels

"Many more pieces per dressing . . . 100% better finish . . . cuts faster and cooler . . . holds form better . . . less grinding time per piece . . . dresses easier."

Those are just some of the advantages listed in a steady stream of endorsements coming from users of Norton G Bond wheels on all types of cylindrical and centerless grinding applications.

Such advantages mean valuable production economies and improvements never before possible. Made with the most efficient vitrified bond ever produced, G Bond wheels are ready to add the work-speeding, profit-increasing "Touch of Gold" to your own O.D. grinding jobs. See your local Norton Distributor, or write NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Massachusetts. W-1578

Making better products. . . to make other products better

NORTON
and its BEHR-MANNING division

NORTON: Abrasives • Grinding Wheels • Grinding Machines • Refractories
BEHR-MANNING: Coated Abrasives • Sharpening Stones • Pressure Sensitive Tapes

If you write maker identify as IEN-9149

Famous Holes

H & K
Perforated Holes

Nature puts the holes in Swiss cheese — large holes, small holes — with no particular pattern in mind. We actually improve on nature when we perforate for our holes are uniformly spaced and precise as to size. So, when you require accurate screens for grading or separating or for any of a thousand other uses, specify H & K. We offer you 70 years of experience, a wide range of hole sizes, shapes and spacings and facilities for perforating any metal, hardboard or plastic available in sheets, plates or coils.

If it can be perforated . . . H & K can perforate it! Ask for our Catalog No. 62

The Harrington & King Perforating Co.

5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

If you write maker identify as IEN-9150

THE SCHRAMM
Pneumatractor

CAN

PUSH — front end loader with bucket (illustrated), or angle dozer blade, rotary sweeper, snow plows, etc.

PULL — anything a wheel tractor will, with either front or rear winch.

POWER — any hydraulically, mechanically and pneumatically operated equipment such as back hoe (illustrated), post hole digger, scaffold boom, etc.

PROVIDE AIR — for any pneumatic tools that can be operated from a 125 C.F.M. AIR COMPRESSOR.

SCHRAMM INC.
The Compressor People · WEST CHESTER · PENNSYLVANIA

SCHRAMM AIR COMPRESSORS

If you write maker identify as IEN-9151

WHITNEY-JENSEN
METAL WORKING TOOLS
FOR 43 YEARS

● Portability and power are combined in this punch by use of the ball bearing screw principle, which enables us to pack 14,000 lbs. of punching pressure in a tool weighing only 9½ lbs. Capacity is ⅜" hole thru ¼" mild steel. Base is available for fixed-position use on bench. *Write for our new Catalog.*

WHITNEY METAL TOOL COMPANY
200 FORBES STREET • ROCKFORD, ILLINOIS

NEW LITERATURE—*Continued*

If you write maker identify as IEN-0746

PLASTIC PIPE . . Also tube, duct, valves and fittings, primarily for chemical service, made of polystyrene, polyethylene, polyvinyl chloride. Two bulletins on pipe and on corrosion data total 20 pages. American Agile Corp., Box 168, Dept. IEN, Bedford, Ohio

If you write maker identify as IEN-0747

PRESS ATTACHMENT . . "Iron Hand" picks up completed work from a press and lifts it clear. Gripping jaws and movement of the pivoted arm are by power cylinders. Catalog 10, 8 pages, gives operating instructions. Sahlin Engineering Co., Box 289, Dept. IEN, Birmingham, Mich.

If you write maker identify as IEN-0748

PROTECTING . . Information on types of industrial dermatitis, together with a summary chart and details on the company's products, in revised 28-page booklet, "Control of Dermatitis in Industry". West Disinfecting Co., 42-16 West St., Dept. IEN, Long Island City 1, N. Y.

If you write maker identify as IEN-0749

PULLING . . Portable hydraulic unit removes or installs drive sprockets on crawler tractors. It rates 50 and 100 ton, has a line of accessories. Bulletin SP-54, 4 pages. Owatonna Tool Co., 371 N. Cedar St., Dept. IEN, Owatonna, Minn.

If you write maker identify as IEN-0750

HYDRAULIC PUMPS . . Fixed and variable-displacement units, also operating and control valves, power cylinders, hydraulic motors and a line of accessories. Condensed Catalog 1101, "Hydraulic Components", 28 pages. Hydraulic Press Mfg. Co., Lincoln Ave., Dept. IEN, Mount Gilead, Ohio

If you write maker identify as IEN-0751

HYDRAULIC PUMPS . . Air pressure to 150 lb. is the operating medium, output is hydraulic pressure to 30,000 lb., for the company's Model S-216-C pump. Cut-away view and capacity chart in 4-page "High Pressure Pump". Sprague Engineering & Sales, Budlong at 135th, Dept. IEN, Gardena, Calif.

If you write maker identify as IEN-0752

RECORD KEEPING . . Punch-card machine handles 6,000 to 12,000 per hour, compares data, corrects and revises, duplicates, extends and computes. Summary in 6-page Folder TM-817, "Multi-Control Reproducing Punch". Remington Rand Inc., 315 Fourth Ave., Dept. IEN, New York 10, N. Y.

If you write maker identify as IEN-0753

RECTIFYING . . Unichrome selenium rectifiers for plating and anodizing service come in ratings from 250 to 10,000 amp. at 6 to 18 volts, to 5,000 amp. to 50 volts. Bulletin UR-2, 4 pages, shows ranges and controls. United Chromium Inc., 100 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN-0754

SPEED REDUCERS . . Single and double-reduction models in a range of sizes and mountings, also a 1:1 right-angle drive. Catalog ADC-254, 28 pages. Euclid Universal Machine Inc., 29930 Lakeland, Dept. IEN, Wickliffe, Ohio

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9152

For the complete story on UNDERGROUND CABLES, read:

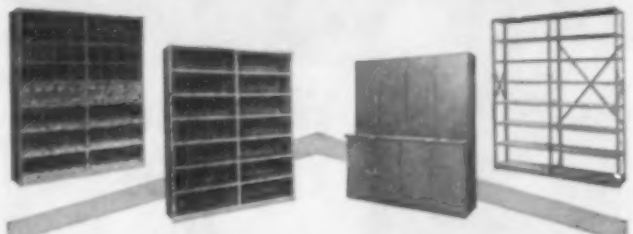
Write today for this Bulletin H-452

HAZARD INSULATED WIRE WORKS
Division of The Okonite Company, Passaic, N. J.

HAZARD insulated cables

2567

If you write maker identify as IEN-9153



HOW TO SAVE MONEY ON
STEEL SHELVING

The real cost of shelving is the erected cost

That's why highest quality DeLuxe shelving costs you less. DeLuxe precision shelving has *fewer parts*, uses *80% less bolts* and is the *only shelving* available that is *100% adjustable*. It's quicker, less costly to install—easier to adjust.

Wherever you are, a DeLuxe factory representative is available to give you a complete engineering, planning and layout service without obligation.

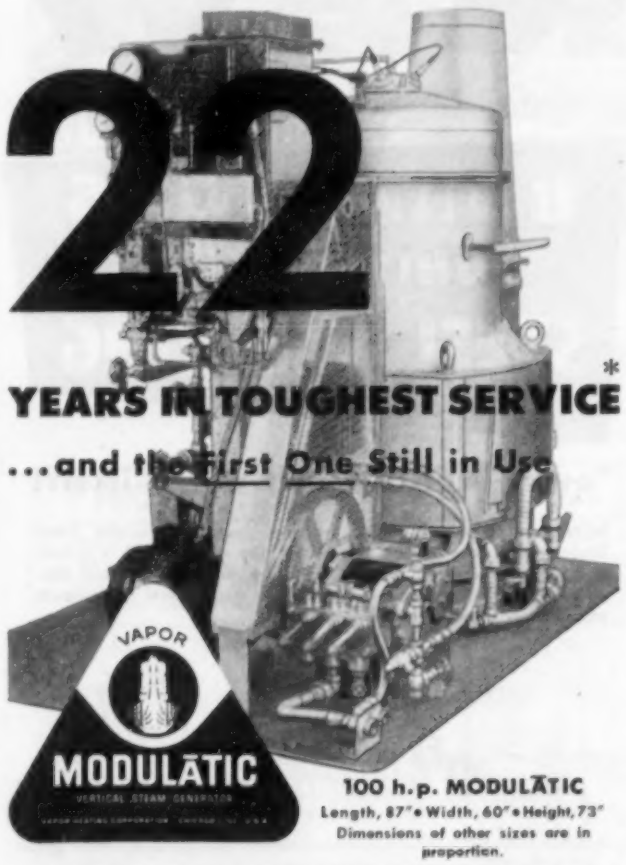
Write for a free catalog now, while your mind is on shelving.

DELUXE METAL FURNITURE CO.
303 Struthers St., Warren, Pa.

DeLuxe

For over 25 Years Manufacturers of.
Storage Shelving • Library Shelving • Storage Cabinets • Shop Equipment

If you write maker identify as IEN-9154



100 h.p. MODULATIC
Length, 87" • Width, 60" • Height, 73"
Dimensions of other sizes are in proportion.

FOR POWER, PROCESSING, HEATING

HERE'S NEWS! Thanks to a new and much larger plant (occupied March 15, 1954) with the finest of modern production facilities, Modulätic reliability and proved performance can now be extended to a wide range of industrial work. Savings in time, maintenance, and fuel are unquestioned. It's the world's most compact source of steam.

ALREADY MORE THAN 6000

The Modulätic is only about 1/5 the size of conventional boilers—comes to you as a complete unit on a single steel base. It passes through normal plant-type doorways, needs no enclosure, installs without expensive foundation or stack in boilerroom or basement, on factory floor, balcony, or roof . . . anywhere, for any purpose.

Operation is automatic—requires virtually no attention. No early reporting. No week-end or holiday standby. Merely set for the pressure desired. Modulätic maintains this pressure, regardless of steam demand.

NOTHING ELSE LIKE IT

Turbulent firing in a pressurized combustion chamber gives Modulätic amazing compactness without the sacrifice of efficiency. Unless you've seen this particular unit, you've seen nothing like Modulätic. Its convenience, conservative ratings, and outstanding performance are backed by more than 50 years' experience in steam generation and controls. Write for complete information about this first steam generator for industrial use to be introduced thoroughly proved.

*Developed in 1932 to heat passenger cars from Diesel locomotives, Vapor Steam Generators remain the exclusive unit for this exacting service.

BRIEF SPECIFICATIONS
Ratings (7 sizes).....18 to 160 hp.
Pressures.....5 to 285 psi.
Fuel...Oil, Gas, Flip-Switch Combination
Efficiency.....78-82%

Inquiries invited from qualified distributors in territories not yet assigned

VAPOR HEATING CORPORATION
80 East Jackson Blvd. • Chicago 4, Illinois
New York • St. Paul • Denver • St. Louis • Atlanta • Washington • Philadelphia
San Francisco • Houston • Jacksonville • Richmond • Montreal • Los Angeles

If you write maker identify as IEN - 9156

POWER PLUS —

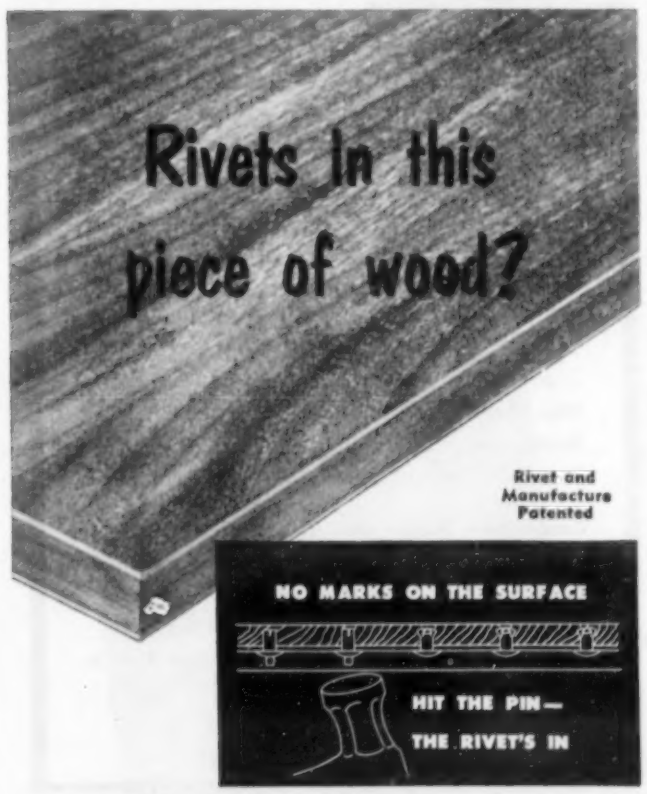
at 2000 blows a minute!

The new CP Universal Electric Impact Wrench's powerful impact action runs nuts or screws . . . and taps faster and easier. Designed with a 2" diameter nose for tight spots, it's rated at ⅜" bolt size capacity but in most cases has a bonus capacity of ⅝". One-hand operation is afforded by its centered pistol grip and reverse switch in the handle. And the reverse switch interlock prevents reversing while running. Has a "unitized" motor which assures long life plus resistance against vibration.

Chicago Pneumatic 8 East 44th St., N. Y. 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 9157



SOUTHCO DRIVE RIVETS

DON'T MAR THE SURFACE

When fastening metal to wood with
Southco Drive Rivets, a blind head forms *inside*
the wood to provide firm holding power
even in thin sections. Since nothing
projects through the wood, there is no evidence
of the fastener on the exterior surface
. . . and, of course, no finishing
operations are required.
Southco Drive Rivets are installed quickly
. . . just hit the pin with a hammer,
They won't vibrate loose or twist out.
There is no problem of over or under driving,
and powerful pull-up forces
hold parts firmly together.
Get the complete story on Southco Drive Rivets.
Write Southco Division
South Chester Corporation
241 Industrial Highway, Lester, Pa.

© 1954

SOUTHCO FASTENERS

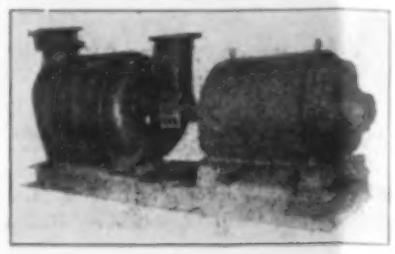
PAWL • SCREW AND SPRING • DRIVE RIVETS
ANCHOR NUTS • ENGINEERED SPECIALTIES
OFFICES IN PRINCIPAL CITIES

WHEREVER TWO OR MORE PARTS ARE FASTENED TOGETHER, STANDARD AND SPECIAL DESIGNS FOR IMPROVED PERFORMANCE AND LOWER PRODUCTION COSTS

If you write maker identify as IEN - 9159

Blower - Centrifugal design, to 9,000 cfm., assembles stock parts

Source: U. S. HOFFMAN MACHINERY CORP.
105 Fourth Ave., Dept. IEN, New York 3, N. Y.



For continuous duty

Frame 386 designates a new centrifugal blower that can be factory assembled using a combination of three interchangeable impellers to provide any required air capacity between 2,000 and 9,000 cfm. Delivery can be specified for pressure from 1 to 9 lb. or vacuum from 2 to 12-in. of mercury. The rotating parts are statically and dynamically balanced. There are no internal wearing parts other than the bearings so efficiency is maintained for the life of the unit.

If you write maker identify as IEN - 9160

Plastic - Contract service to apply non-adhesive coating on metal

Source: CHICAGO GASKET CO.
1271 W. North Ave., Dept. IEN, Chicago 22, Ill.

Price quotation upon request

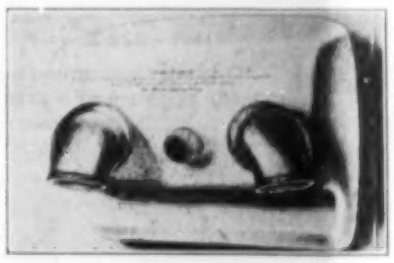
Teflon-Ize trade names a new liquid dispersion of teflon to be sprayed and baked on metal in order to provide a slippery surface for the metal. This surface will readily release normally sticky food products, adhesives, detergents, plastics, rubber. The company announces availability of its new custom coating service to apply the material on molds, pans, trays, rolls, tables, heat sealers, equipment parts that are sent to it for this purpose.

One of two available coatings is green in color and is employed where economy is the primary factor. The second coating is heavier and colored black. It is used where wear resistance is the important feature. The coating is chemically inert and is heat resistant to 600 deg. F.

If you write maker identify as IEN - 9161

Wash Rooms - Hot air blower replaces towels to dry hands and face

Source: AMERICAN DRYER CORP.
1324 Locust St., Dept. IEN, Philadelphia 7, Pa.



List price is $139.50

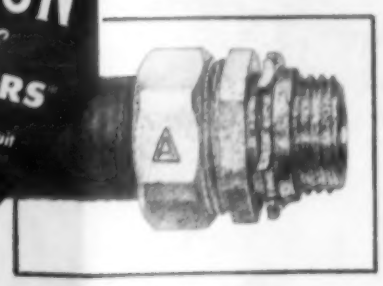
Heated air is directed through two swivel nozzles so two workers can dry their hands and faces at the same time with this new Model DA-20 machine. It is assembled in a white chromium trimmed cabinet to mount on a wall. It measures 13 by 11½ in. and is fitted with a timing device that shuts off after it has been started and run for a 40-sec. cycle.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9162

APPLETON "ST" Series CONNECTORS for Liquid Tight Flexible Conduit

Quick, Easy to Install!



UNIQUE *Appleton Construction*

No Other Liquid Tight Connectors Have The Exclusive APPLETON Brass Ferrule

• Only *Appleton* "ST" Series Connectors have the brass ferrule that screws and crimps on for a perfect seal and positive ground . . . *always!* Nothing to come loose, deteriorate, crack or break! That's why these unique connectors assure positive exclusion of liquids, fumes, chips and other matter from machinery electrical systems . . . and a permanent ground between conduit and connectors that maintains voltage unfailingly within 10 millivolts drop.

Appleton "ST" Series Connectors come straight to fit flexible conduit from ⅜" to 4". Also, 45° and 90° to fit flexible conduit from ⅜" to 2". For complete information about these truly unique connectors that avoid wiring system failure write, *today!*

APPLETON ELECTRIC COMPANY
1716 Wellington Avenue • Chicago 13, Illinois
Also Manufacturers of

If you write maker identify as IEN - 9163

NYLINED* BEARINGS

. . . with Smooth, Tough, Du Pont NYLON

Solve Many Bearing Problems

- Resiliency resists poundout
- Permit dry operation
- Minimize abrasion failures
- Silent operation
- Lower friction
- Superior corrosion resistance
- Damp mechanical vibration
- Eliminate friction oxidation
- Operate in liquids
- Close fits
- Non-contaminating
- Extremely compact
- Light weight
- Low cost
- Longer life
- Less maintenance
- Bearing surface instantly replaceable

* For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.

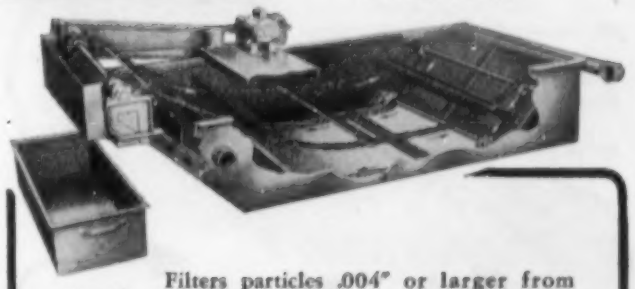
Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

If you write maker identify as IEN - 9164

New! Filters Small Solids . . .

Delpark Settling and Filter SYSTEM



Filters particles .004" or larger from liquids of varying viscosity containing solids of different particle sizes and weights.

Power-driven expeller flights, solid and of special bristle brushes, sweep solids from the screen and settling area up a ramp at the opposite end. A special cleaning device removes the solids from the flights before their return to the filter. Screens easily removed for manual cleaning. A blank metal sheet replaces the screen during cleaning.

WRITE FOR NEW BULLETIN

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVE. LEBANON, INDIANA

If you write maker identify as IEN - 9165

Control Costs!

Print the Weight with New TOLEDOS

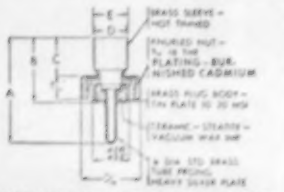
New Toledo Printweigh Scales meet your needs today for *closer cost control!* Stop human errors in reading, remembering, recording . . . provide accurately printed weights with split-second speed . . . *accurately* recorded!

Printweighs are available for dial type scales in the great new line of Industrial Toledos! *44 new features* include . . . new clean-line design . . . double-pendulum mechanism in one-piece sector . . . lifetime fulcrum. Send for new condensed catalog No. 2001. Toledo Scale Co., Toledo 1, Ohio.

TOLEDO.
Headquarters for Scales

If you write maker identify as IEN - 9166

Ideal for ANTENNA CONNECTIONS PHOTO-CELL WORK MICROPHONE CONNECTIONS



SUPPLIED IN 1 & 2 CONTACT TYPES

JONES SHIELDED TYPE PLUGS & SOCKETS

P-202-CCT

LOW LOSS PLUGS AND SOCKETS FOR HIGH FREQUENCY CONNECTIONS

For quality construction thru-out, and fine finish, see diagram above.

101 Series furnished with 1/4", 290", 5/16", 3/8", or 1/2" ferrule for cable entrance. Knurled nut securely fastens unit together. Plugs have certain insulations; sockets bakelite. Assembly meets Navy specifications.

202 Series Phosphor bronze knife-switch type socket contacts engage both sides of flat plug contacts — double contact area. Plugs and sockets have molded bakelite insulation.

For full details and engineering data ask for Jones Catalog No. 20.

P-101-1/4

S-101

S-202-B

JONES MEANS PROVEN QUALITY

HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as IEN - 9167

Why Pay for Two Valves?

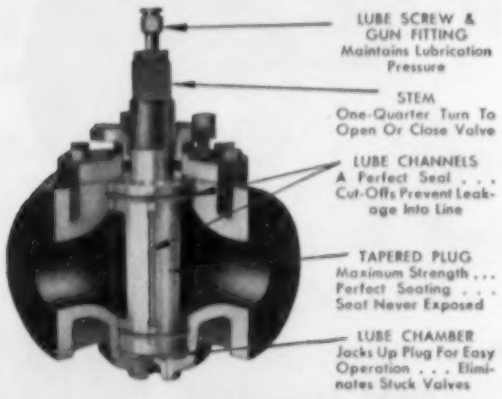
ONE ROCKWELL - Nordstrom Multiport will do the job better!

FREE

Send for this FREE Multiport valve Chart that shows how Rockwell-Nordstrom Multiport valves can cut your costs

Eliminating unnecessary valves is *real* economy. But Nordstrom *Multiports* give you even greater savings because pressurized lubrication seals seating surfaces, prevents galling and eliminates wearing friction. Available in semi-steel and special alloys, Nordstrom *Multiports* and *Straightways* mean long life at lowest cost. Get the complete story. SEND THE COUPON TODAY. Rockwell Manufacturing Company, Pittsburgh 8, Pa.

Canadian Valve Licensee: Peacock Brothers Limited



Rockwell-Nordstrom Valves

Lubricant-Sealed for Positive Shut-Off

Rockwell Manufacturing Company Dept. 5433C
400 North Lexington Avenue, Pittsburgh 8, Pa.

☐ Please send me a *Multiport Valve Chart.*
☐ Please send me a copy of the Rockwell-Nordstrom Bulletin V-217

Name_____
Company_____
Address_____
Street
City Zone State

NEW LITERATURE —Continued

If you write maker identify as IEN - 0755

RELAYS . . Summary chart on five sealed types and eight open types gives coil and contact data, dimensions, uses. Bulletin 560-A, "Magnetic Relays", 4 pages. Essex Wire Corp., B-B-M Div., Dept. IEN, Logansport, Ind.

If you write maker identify as IEN - 0756

REFRIGERATING . . Evaporator pressure control valve, Wolf-Linde design, is for air and liquid-cooling units. How it works, where to install it, selection of 11 sizes, capacity nomograph, in 16-page Catalog 16-B. Dersch, Gesswein & Neuert Inc., 4849 W. Grand Ave., Dept. IEN, Chicago 39, Ill.

If you write maker identify as IEN - 0757

RELAYS . . Catalog of 44 pages covers midget relays, aircraft and circuit control types, telephone, impulse, motor-starting, overload-trip and latch types. Leach Relay Co., 5915 Avalon Blvd., Dept. IEN, Los Angeles 3, Calif.

If you write maker identify as IEN - 0758

RESISTORS . . Forty-five types of high-voltage resistors are presented in 8-page Bulletin G-1 along with characteristics, resistance ranges, installation suggestions. International Resistance Co., 401 N. Broad, Dept. IEN, Philadelphia 8, Pa.

If you write maker identify as IEN - 0759

RIVETING . . Installation tools for the company's Hi-Shear rivets include gun sets, squeezer sets, bucking bars. 1954 Tool Catalog, 24 pages, also gives information on Hi-Torque bolt tools, punch-out tools, gages. Hi-Shear Rivet Tool Co., 8924 Bellanca Ave., Dept. IEN, Los Angeles 45, Calif.

If you write maker identify as IEN - 0760

SAWING MACHINE . . Metal-cutting band saw handles 5 and 10-in. rounds, 10 and 18-in. flats in two sizes. The larger model can be supplied with coolant equipment. Catalog, 4 pages. Johnson Mfg. Co., Dept. IEN, Albion, Mich.

If you write maker identify as IEN - 0761

SEALING . . Microscopic hollow spheres of phenolic resin float on top of crude oil in a storage tank to reduce evaporation loss 80 to 90 per cent. "Microballoon" Bulletin J-794, 12 pages, tells how they work, includes a sample packet. Bakelite Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 0762

SPEED REDUCERS . . Catalog 100, 160 pages, presents herringbone-gear reducers in 60 standard ratios and 57 standard sizes to 1,950 hp. Helpful application data, selection examples, ratings, dimensions. W. A. Jones Foundry & Machine Co., 4401 Roosevelt Road, Dept. IEN, Chicago 24, Ill.

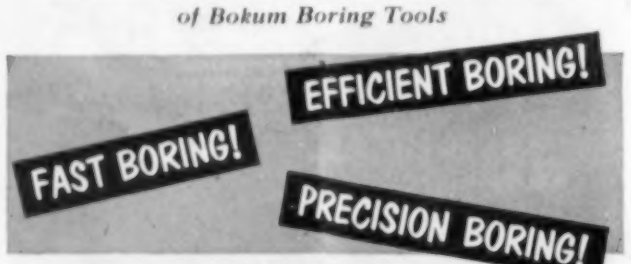
If you write maker identify as IEN - 0763

SPROCKETS . . Taper-Lock steel sprockets and roller chain in stock sizes from No. 40, 1/2-in. pitch, to No. 160, 2-in. pitch. List prices in Bulletin A-632, 4 pages. Dodge Mfg. Co., 500 S. William St., Dept. IEN, Mishawaka, Ind.

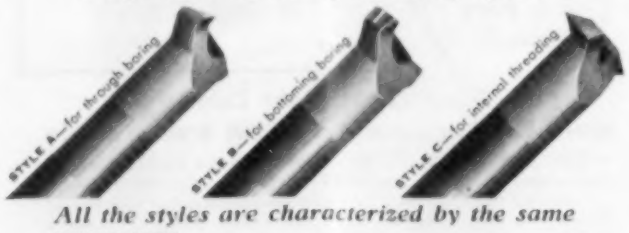
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9169

These phrases briefly describe the Performance of Bokum Boring Tools



Each of the three styles is designed for its own specialized purpose:



All the styles are characterized by the same

UNIQUE FORM
HELICAL BACK OFF
RESHARPENING ON ONE FACE ONLY

Available in high speed steel, carbide-tipped, solid carbide — in standard sizes and with short neck lengths. Put up in special wooden boxes in a variety of size assortments to meet your specific needs.

Write to Dept. N for complete catalog.

No. 1139-6—HSS
No. HSS 500—Short neck lengths
No. 398-6—Carbide-tipped
No. CT 500—Short neck lengths (carbide tipped)

BOKUM TOOL CO. 14775 Wildemere Ave., Detroit 38, Mich.

If you write maker identify as IEN - 9170

ONE TON AIR PRESS FOR $85.50?

YES—AND YOU CAN'T BEAT IT FOR QUALITY!

Air-Mite Air Arbor Press Features:

- Solid Steel Column—greater strength, rigidity
- Brass Cylinder, Aluminum End Castings, Neoprene Piston Cups
- Accurately ground 5" x 5" table
- Quick set-up and stroke adjustment for maximum flexibility

You get more for your money when you choose AIR-MITE—more press, more utility and more production. Built by air press specialists to meet the demand for a low cost unit that could stand the gaff of high production work, AIR-MITE presses will show you quality, efficiency and economy you never thought possible at their price. Made in 1/4, 1/2, 3/4 and 1 ton capacities with spring or air return.

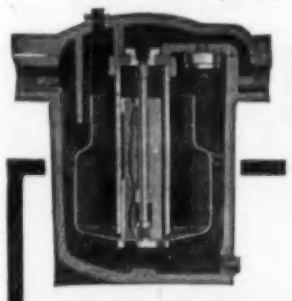
Write for complete catalog on AIR-MITE Presses and Air Cylinders.

NEED A SPECIAL PRESS? Many special adaptations of AIR-MITE Presses are available. Write us your needs.

AIR-MITE

4419 W. CARROLL AVENUE • CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 9171



illinois STEAM TRAP

Simple—has only two moving parts

Valve Stem Travels Independent of Bucket—no other trap has this feature.

Instantaneous Valve Action—either wide open or tight shut—will not dribble on partial closing of valve under slow condensation rates.

Wire Drawing Impossible—valve has snap action.

Simple—moving parts are valve and bucket.

Cannot Air Bind—vents air continuously without loss of steam.

Cannot Blow Steam—always water sealed.

Surface Discharge—flushes out all grease and sludge.

Valve Seat—of special alloy, fully guaranteed.

Inspection Easy—without disturbing piping.

Works Equally Well on All Fluids—compressed air lines, air separators, air aftercoolers.

Write for Bulletin 35

Consult us on your requirements

illinois ENGINEERING ILLINOIS ENGINEERING COMPANY
2035 SOUTH RACINE AVENUE, CHICAGO 8
DIVISION OF AMERICAN AIR FILTER COMPANY, INC.

If you write maker identify as IEN - 9172

PICKS UP DIRT, CHIPS, LIQUIDS, CUTTING OILS

• Easily
• Quickly
• Thoroughly

at less cost than ever before. The American Model No. 500-55 picks up 50 to 100% faster due to a new exclusive air handling feature that produces more power than any vacuum of the same motor rating.

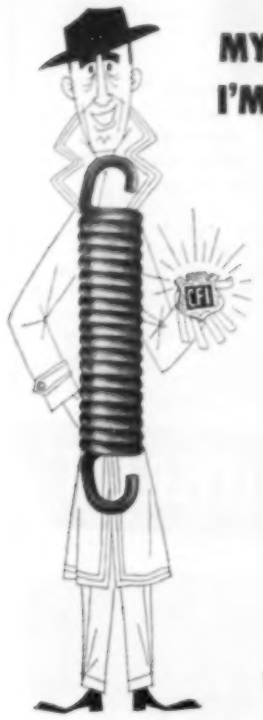
Ideal for flood control, boiler cleaning, sump cleaning and powerful enough for any large or difficult industrial, store or building job. By-pass motor unit can be detached for use as a powerful blower or portable vacuum cleaner. Lid fits any 55 gallon tank, permitting shifting from one drum to another in a matter of seconds for easier disposal. Extra large tank and bag keeps machine operating longer between emptyings.

Simple to operate, nothing to get out of order, sturdily built for years of trouble-free service. The model No. 500-55 is only one of a large line of industrial and building vacuum machines, complete with attachments, all suited to a wide variety of uses and applications.

Write for full details today.

AMERICAN CLEANING EQUIPMENT CORP.
2031 South Halsted Street • Chicago 8, Ill.

If you write maker identify as IEN-9173



MY NAME'S WICKWIRE I'M A SPRING

Extension Spring, they call me. My job? Look anywhere.

You'll find me in your home . . . under the mattress and in dozens of other places. At your office . . . inside the typewriters, underneath your telephone dial. At the factory, too, keeping check on all kinds of machinery.

You've probably heard of my partners, Compression Spring and Torsion Spring. If we can help you, just call on us. You can get us by contacting either of the offices listed below.

THE COLORADO FUEL AND IRON CORPORATION
Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION
Atlanta • Boston • Buffalo • Chicago • Detroit
New Orleans • New York • Philadelphia

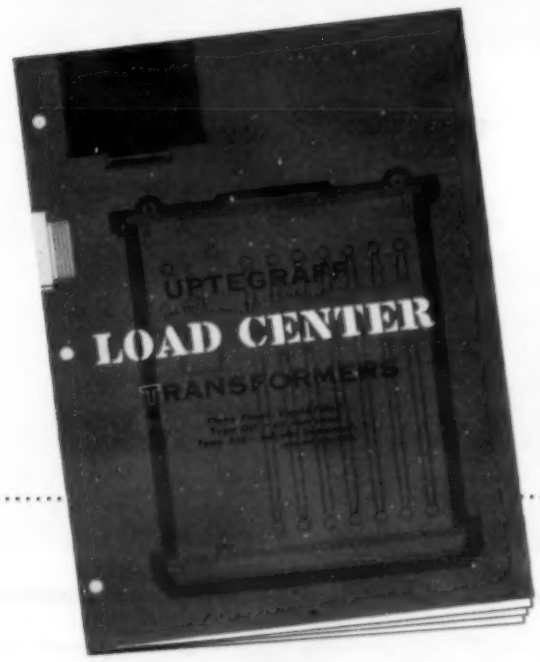
WICKWIRE SPRINGS AND FORMED WIRES
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

2506

If you write maker identify as IEN-9174

Send for this

FREE HANDBOOK



It will help you plan MONEY-SAVING Electric Power Layouts

Uptegraff announces a new series of Liquid Filled Load Center Transformers, in eighteen ratings, from 150 to 2500 KVA, 3-phase. Designs are based upon extensive experience with this type of transformer, and represent modern engineering and manufacturing practice.

To simplify the selection and arrangement of auxiliary equipment, we have prepared a unique brochure, with which you can readily determine overall dimensions, total weights and other information for any combination of the Basic Transformer Unit with various types of switches and accessories. A check system permits the easy and accurate locating of desired data pertaining to various arrangements of properly rated equipment for any selected basic unit.

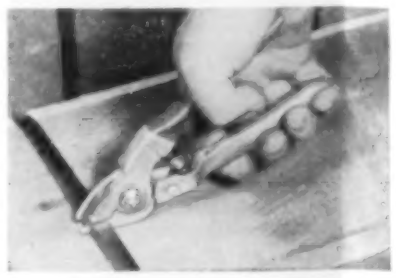
SEND for a free copy of this 20-page data book, giving important and useful information on Uptegraff Load Center Transformers.

R. E. Uptegraff Manufacturing Co.
Scottdale, Pennsylvania

If you write maker identify as IEN-9176

Cutting - Plier type tool to remove flat and wire type strapping

Source: H. K. PORTER INCORPORATED
74 Foley St., Dept. IEN, Somerville 43, Mass.



For shipping rooms

Heat treated blades are mounted in the nose of this new tool. Plastic cushion grips on the handles prevent slipping and eliminate the chance for an operator to acquire blisters. A spring keeps the tool in cutting position. A thumb lock can be employed to close it when it is not in use. The sharp pointed lower jaw slides under a tight strap or a baling wire. The thin flat blade prevents damage to the container or its contents. A notch in the lower blade keeps round wire in position for cutting. A "keeper" makes certain that strapping or wire remains straight in the jaws.

If you write maker identify as IEN-9177

Shearing - Foot operated machine rates 36 in. in 18 gage mild steel

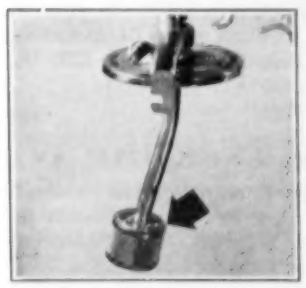
Source: FREDERICK IRON & STEEL INC.
Seventh & East Sts., Dept. IEN, Frederick, Md.

Model 1836

Equipment, counted as standard on this new Frecut foot operated shear, includes front and back gages, an angle gage and a spring backed hold down. The front gage can be set for cut width to 33 in., the rear gage to 26 inches. The machine occupies floor space measuring 61 by 44 in. with the gages in place and adjusted to their maximum positions. Overall height is 41 inches. The shear blade is brought down by depressing a foot pedal that extends between the machine feet. Springs return the blade to "up" position when the pedal is released by the operator.

If you write maker identify as IEN-9178

Paint is strained prior to entering the suction tube on a spray gun by means of the Worthy strainer. It attaches as shown in the illustration, consists of two metal heads and a fine mesh wire cloth. It employs a new spring washer to hold it in place and a teflon gasket when it is applied in hot lacquer service. The strainer lists at $1.50. The washer and gasket add 20 cents. Worthy Products Corp., Box 111, Dept. IEN, Riverside, Ill., is the manufacturer.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-9179

GEAR PROBLEMS? *Check with-* FAIRFIELD!

If you use gears in the product you make, we believe it will pay you, as it has others, to become acquainted with FAIRFIELD—the place where fine gears are produced to meet your specifications EFFICIENTLY, ECONOMICALLY! Fairfield's production facilities are unexcelled for making all kinds of accurate, automotive type gears such as are now finding wide use in all branches of industry: for tractors, trucks, and buses . . . for agricultural implements . . . for construction machinery . . . for machine tools. Ask for latest literature describing Fairfield's facilities. Your inquiry will receive prompt attention.

FAIRFIELD
Manufacturing Co.
2333 S. Concord Road
LAFAYETTE, INDIANA

If you write maker identify as IEN-9180

NO Reducing Valve Needed

Here's real economy in temperature control

Because Spence Temperature Regulators are designed to limit heater steam pressures to an adjustable maximum, the need for a separate reducing valve is completely eliminated.

This means one relatively small combination pressure and temperature regulator replaces a reducing valve of the same size and a larger temperature regulator. Practically the entire cost of the large separate temperature regulator is saved. And, the total saving would also include the cost of a 3-valve by-pass along with all labor for installation.

This design feature is just one of the reasons for the thousands of Spence installations throughout American industry. *For details of other important design features, write for Temperature Regulator Bulletin.* SE-137

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK
Spence

If you write maker identify as IEN-9181

WATCH OUT, ALFONSO, ONE FUMBLE'S ALL IT TAKES...

Indifference can quickly spoil a hard won reputation for quality performance. You don't take chances when you stick to a solder you know and trust . . . time-proved Kester Solder, constant in solder alloy and always consistent flux formulae.

WRITE TODAY for Kester's New 78 Page Informative Textbook, "SOLDER . . . its fundamentals and usage"

KESTER
SOLDER COMPANY
4211 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN-9182

POSITIVE TOOL STEEL IDENTIFICATION

WITH THIS NEW

12-Color Chart!

Now . . . to help you eliminate costly tool steel mix-ups, Carpenter Matched Tool & Die Steel bars are painted FULL LENGTH with distinctive colors! This *practical* marking system, along with this new Wall Chart printed in colors that match the completely-painted bars, enables you to . . .

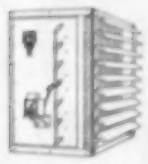
QUICKLY IDENTIFY TOOL STEELS!
REDUCE YOUR OWN MARKING COSTS!
AVOID COSTLY STOCK MIX-UPS!
SIMPLIFY INVENTORY-TAKING!

Tool Steel Selector and Identification Wall Chart — 21" x 30"—printed in *12 colors!* To cash-in on this new color-marking system, send for your Wall Chart, *now.* Just mail the coupon.

THE CARPENTER STEEL COMPANY
151 WEST BERN STREET • READING, PA.
Please send me the free Tool Steel Selector and Identification Wall Chart.

NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
(PLEASE PRINT)

If you write maker identify as IEN - 9183



Wing Fresh Air Supply Heater for window or wall mounting.

When air is exhausted from paint spray booths, from grinding, casting, chemical processing or other plant operations or is used in combustion, it must be replaced. Wing Fresh Air Supply Heaters provide the finest means of replacing exhausted air and supplying fresh air at the right temperature, winter and summer.

WING FRESH AIR SUPPLY HEATERS require no extensive duct work. They draw in the outside air at prevailing outside temperature and pass it through multiple by-passes and heating elements. The hot and cold air mix almost instantly assuring uniformly warm air at the outlet.

Fresh Air Supply Heater for mounting in roof or monitor opening.

The heating coils can never freeze as they can where temperatures are controlled by throttling the steam supply. Write for Bulletin.

L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N.J.

If you write maker identify as IEN - 9184

. . . you can read any surface temperature in your plant . . . accurately and easily . . . with the Alnor Portable Pyrocon.

Compact in size, complete in precision design and workmanship, this rugged instrument assures the highest standards of speed, accuracy and dependability. You can take temperature readings on materials in process, the finished product or the heated equipment itself—in as few as 3 seconds!

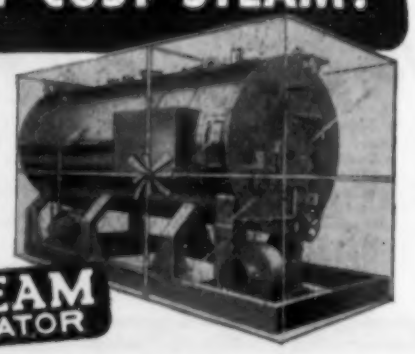
Alnor Portable Pyrocons come in scale ranges to 2000° F., with thermocouples for every application. You'll find full details on the Pyrocon exactly suited to your operations in Bulletin 4257. Send for your copy now. Write: Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 9185

TROUBLE-FREE PACKAGE for LOW-COST STEAM!

10 to 600 h. p.
15 to 200#
OIL or GAS



AMESTEAM GENERATOR

- Complete — ready to connect and operate.
- Saves labor — fully automatic.
- Saves fuel — 80% guaranteed efficiency.
- Easy maintenance — all parts readily accessible.

WRITE FOR FREE BULLETIN TODAY

AMES IRON WORKS INC.
BOX E-84
OSWEGO, N. Y.

AMES IRON WORKS
Box E-84, Oswego, N. Y.
Gentlemen:
Please send me further information on AMESTEAM GENERATORS and name of nearest representative.
NAME.....
COMPANY.....
ADDRESS.....

NEW LITERATURE—Continued

If you write maker identify as IEN - 0764

STEEL PLATE . . Sizes from ½ to 15 in. in thickness are kept in stock ready for shipment. Table of sizes, grades and qualities, cutting and inspection services, are summarized in 4-page Bulletin 702. By-Products Steel Co., 503 Lukens Bldg., Dept. IEN, Coatesville, Pa.

If you write maker identify as IEN - 0765

STRAPPING . . Hand and power machines to apply round steel strapping. Four new 4-page bulletins, "Models TA-TE, TI-N-LK, G and Q". Gerrard Steel Strapping Div., U. S. Steel Corp., 2915 W. 47th, Dept. IEN, Chicago 32, Ill.

If you write maker identify as IEN - 0766

SWITCHES . . Condensed illustrated data on 258 types of snap-action switches, actuators and enclosures. Catalog 101, 20 pages. Micro Switch Div., Minneapolis-Honeywell Regulator Co., 30 E. Spring St., Dept. IEN, Freeport, Ill.

If you write maker identify as IEN - 0767

SWITCHGEAR . . Metal-enclosed draw-out type for outdoor and indoor service to 600 volts ac. Bulletin 6004-A, 28 pages, gives planning data on Multumite units. I-T-E Circuit Breaker Co., 19th & Hamilton Sts., Dept. IEN, Philadelphia 30, Pa.

If you write maker identify as IEN - 0768

ELECTRIC TESTING . . Instrument locates grounds on energized power circuits, traces overhead power lines without climbing, traces buried circuits. "Brunt Faultfinder", 8 pages. Parr Mfg. Corp., 44 Austin St., Dept. IEN, Newark 5, N. J.

If you write maker identify as IEN - 0769

OPTICAL TESTING . . Instrument Bench is a bar-type precision bed on which to mount lenses, screens, lamps, mirrors, tubes, microscope or telescope, camera, for a variety of test work. Bulletin, 20 pages. Meyer Opticraft Inc., 39 W. 60th St., Dept. IEN, New York 23, N. Y.

If you write maker identify as IEN - 0770

TENSION TESTING . . And also compression testing are performed by two universal hydraulic machines rated at 10 to 30 ton. Bulletin 4213, 4 pages, has a diagram to show how the load indicator works. Baldwin-Lima-Hamilton Corp., Paschall P. O., Dept. IEN, Philadelphia 42, Pa.

If you write maker identify as IEN - 0771

LIFT TRUCKS . . Major mechanisms in a 4,000-lb. electric fork lift truck are pictured in 12-page Book 64 including steering, braking, drive, control. Baker-Raulang Co., 1250 W. 80th St., Dept. IEN, Cleveland 2, Ohio

If you write maker identify as IEN - 0772

LIFT TRUCKS . . Fluid coupling is built into the flywheel of G-52 gasoline-power 2,000-lb. fork lift truck. Details in 8-page Bulletin 5013. Yale & Towne Mfg. Co., 11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9186

IMPERIAL Tubing Test Plugs

. . . for temporarily shutting-off tubing

For complete information, ask for Folder 3030 which also describes IMPERIAL'S complete line of tubing tools for cutting, flaring, bending, etc.

See your supply house

When you wish to shut-off the end of a tube temporarily, simply insert the correct size IMPERIAL Tubing Test Plug and tighten the wing nut. Synthetic rubber expands and seals tube. Will hold up to 100 lbs. pressure.

Far less expensive than soldering caps on the ends of the tube. No need to install a valve or pinch-off tubing.

Imperial Test Plugs are being extensively used for pre-testing tubing installations or "trouble shooting" for leaks. Field of application is growing rapidly.

Keep a few of these plugs on hand for every size of tubing you use.

No. 140-F Imperial Tubing Test Plugs for ¼", ⅜", ½", ⅝", ¾" and ⅞" O.D. Tubing.

THE IMPERIAL BRASS MFG. CO., 508 So. Racine Av., Chicago 7, Ill.

IMPERIAL Pioneers in Tube Fittings and Tube Working Tools

If you write maker identify as IEN - 9187

Makes "Women's Work" of Handling DOUBLE-FACED PALLETS

Magic "Toggle-Booster" floats the truck into the pallet with minimum jolt or jar.

Easiest, quickest way to handle palletized loads—for short hauls, spotting loads or in congested areas. Just roll the truck into the pallet, lift the load and roll it away. Short stroke pump projects rear wheels through bottom face of pallet—lifts any load up to 4000 lbs. easily.

the SERVICE LEVER-LIFT*

*Write for Circular 411.

THE Olson CORPORATION
Elyria, Ohio
New including the famous SERVICE CASTER & TRUCK CORP. line of heavy duty materials-handling products

If you write maker identify as IEN - 9188

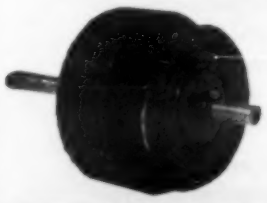
ASKANIA REGULATOR COMPANY
280 E. Ontario Street, Chicago 11, Illinois
Subsidiary of General Precision Equipment Corp.

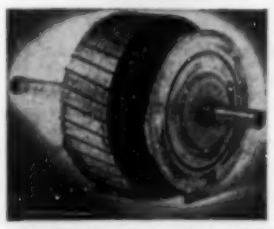
If you write maker identify as IEN - 9189

CLEANS ELECTRIC MOTORS

WITHOUT DISASSEMBLY . . .

REMOVES DIRT and GREASE WITH FILM-FREE RESULTS





Brulin Solvent Degreaser is harmless to rubber, and because it is a non-conductor of electricity, motors may be cleaned by immersion and by running while immersed. Dirt and grease are removed with no film deposited. Periodic maintenance of motors by cleaning prevents build-up of "varnishes" common in electric motors. Non-toxic and relatively non-inflammable. Ideal for maintenance of motors used in air-conditioning and circulatory systems where air flow deposits dirt and dust due to magnetic attraction.

Write today for more complete information

BRULIN Solvent Degreaser

BRULIN & COMPANY, INC.
2938 COLUMBIA AVENUE • INDIANAPOLIS 7, INDIANA

If you write maker identify as **IEN - 9190**

For faster loading with greater safety . . .

Magcoa Dockboards, made of light-weight heavy-duty magnesium (¼ the weight of steel), speed loading and unloading . . . reduce accident and insurance rates . . . and pay for themselves. Every Magcoa Dockboard is carefully fitted to your specific handling requirements as to size, capacity, dock-to-carrier span, equipment under-clearance and other important factors.

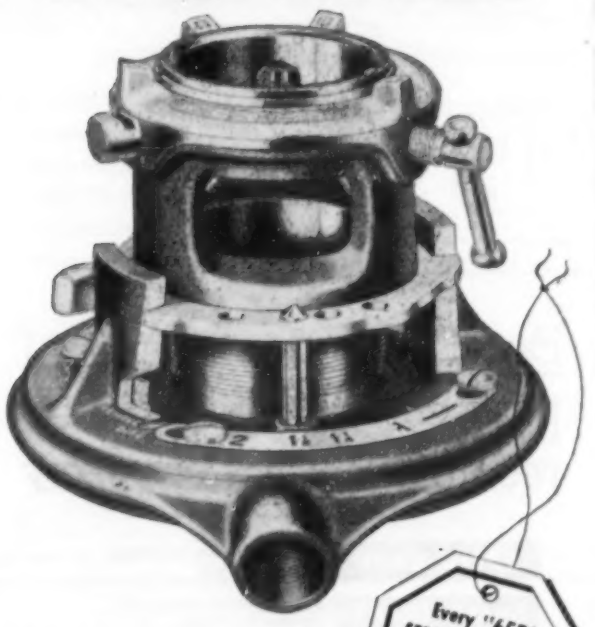
Write today for the free new *Dockboard Facts File.*

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as **IEN - 9191**

For Trouble-Free Pipe Threading ...its a 65R

RIDGID



This 65R Threads 1" to 2" pipe with 1 set of dies . . . and it won't jam!

You won't find a die stock to equal this popular 65R—anywhere! It saves time—one set of self-contained high-speed dies adjust to 1", 1¼", 1½" or 2" pipe or conduit in 10 seconds! Mistake-proof self-centering work-holder sets to size instantly! It saves trouble—lead screw won't jam, it kicks out automatically when standard length thread is cut. Clean perfect threads, *fast!* For trouble-free extra-easy pipe threading buy 65R at your Supply House.

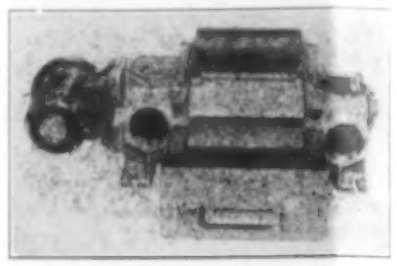
THE RIDGE TOOL COMPANY · ELYRIA, OHIO, U.S.A.

RIDGID
Work-Saver Pipe Tools

If you write maker identify as **IEN - 9193**

Separating - Magnetic unit cleans grinding and machining coolants

Source: HONAN-CRANE CORPORATION
510 Indianapolis Ave., Dept. IEN, Lebanon, Ind.



Continuous action

Coolant containing ferrous metal particles, from operations such as grinding, milling, shaving, honing, connects into any of three 2-in. ports on one side of this new Houdaille magnetic separator. Turbulent flow is maintained through a channel beneath a motor driven magnetic cylinder to the opposite side of the machine where two more 2-in. outlet ports are located. Three removable plugs are supplied for insertion in the unused ports. The separator is available in 10 and 20 gpm. capacities for soluble oils and in 5 and 10 gpm. ratings for mineral oils. The 10-gpm. soluble oil assembly measures 20 by 8 by 6½ inches.

Permanent ring magnets are enclosed in the motor driven cylinder which is rotated at 4.8 rpm. by a 1/70-hp. geared head motor for connection to a 110-volt ac line. Ferrous particles are attracted to the cylinder and are carried out of the coolant stream to be removed by a non-magnetic wiper and delivered into the removable trough illustrated at the front.

If you write maker identify as **IEN - 9194**

Truck - Manipulator attachment to handle hot forgings and billets

Source: ALLIED MFG. & SALES CO.
3101 W. Grand Ave., Dept. IEN, Chicago 22, Ill.

For specified work

Loads to ½ ton can be carried and rotated through a complete circle in either direction by this new manipulator attachment. It is a hydraulically powered rotating device with one stationary arm and one removable clamping arm, both of which are made to handle specified work. The complete attachment weighs 500 lb. or more and is suited for application on trucks with lifting capacities at 1½ ton or more. Minimum load capacity on the manipulator is ½ ton. The unit shown in the illustration, with a billet in its grip, weighs 1,500 lb. and is employed on a 3-ton lift truck.

If you write maker identify as **IEN - 9195**

High speed photography, employing the Fastax camera, will soon be available on a national contract basis. Several industrial areas now are served, such as the Chicago area by Austin Camera Co., 6021 W. North Ave., Dept. IEN, Oak Park, Ill. This company is prepared to come into your plant, if you are located in industrial Chicago or the midwest, bringing the equipment and doing the work you have in mind.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9196**

A NEW MILTON ROY BULLETIN ON MOTOR-DRIVEN CONTROLLED VOLUME PUMPS

BULLETIN NO. 553

This is a *valuable reference book* for your library on pumping in controlled volume. Send for your *free copy.*

• • •

Here's an informative, helpful Bulletin which tells you what *Milton Roy Motor-Driven Controlled Volume Pumps are—what they do—how they do it!*

- The Bulletin is profusely illustrated, with photographs, diagrams, helpful applications, selection charts and data.
- Chemicals handled with these versatile pumps, together with crisp color charts showing relative corrosion resistance of various metals, are given.
- Pump capacity regulation by various plunger speed and stroke adjustments are described. Application to modern instrumentation processes is explained.

MILTON ROY COMPANY
1302 E. MERMAID LANE • PHILADELPHIA 18, PA.

If you write maker identify as **IEN - 9197**

"Most of our dust is very fine but the DAY "AC" Dust Filter solved our problem".
Lapp Insulator Co., LeRoy, N. Y.

5 reasons for using DAY DUST FILTERS

("AC"—Hersey Type)

Five reasons why industries use and *reorder* DAY Dust Filters.

1. **Constant air volumes.**
2. **High air-to-cloth ratio requires minimum floor space.**
3. **Self-adjusting blow rings assure perfect tube cleaning.**
4. **Continuous, automatic operation. No shut-down for cleaning.**
5. **Furnished housed or unhoused.**

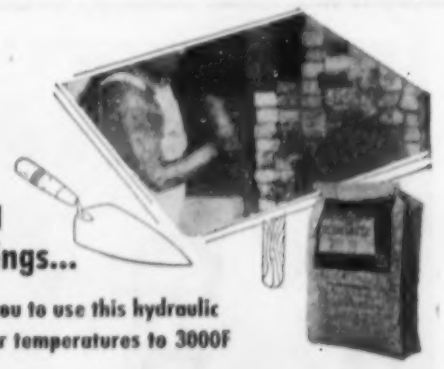
If you have a dust problem, write toDAY for Bulletin 528-R.

DAY SINCE 1881

The DAY Company
813-3rd Ave. N. E., Minneapolis 13, Minn.
In Canada: P.O. Box 707, Ft. William, Ont.
Branch Plants in Buffalo, Ft. Worth and Toronto, Ont.
Representatives in Principal Cities

If you write maker identify as **IEN - 9198**

J-M BLAZECRETE builds longer lasting refractory linings...



That's why it pays you to use this hydraulic setting refractory for temperatures to 3000F

Blazecrete* linings last longer because they resist spalling, withstand slagging action, and are not harmed by rapid temperature changes.

Thus you cut down on refractory maintenance costs and you save on labor costs, too, because Blazecrete goes on fast. For troweling, just mix Blazecrete with water as you'd mix ordinary concrete . . . then slap-trowel it in place. When gunned, it adheres readily with a minimum of rebound loss. Either way, Blazecrete goes on fast without laborious ramming or tamping.

Three types of hydraulic-setting Blazecrete are available.

*Reg. U. S. Pat. Off.

3X BLAZECRETE—For temperatures through 3000F. Excellent for forge furnace linings, lime kilns, burner blocks, soaking pits, and industrial boilers.

STANDARD BLAZECRETE—For temperatures through 2400F. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE—For temperatures through 2000F. An insulating refractory . . . light in weight, low in thermal conductivity.

For full details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

Johns-Manville BLAZECRETE
BUILDS BETTER REFRACTORY LININGS

If you write maker identify as **IEN - 9199**

TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES

Friction Clutches and Fluid Drives

Twin Disc *. . . pioneer in the power linkage field . . .* offers the *widest variety* of power linkage for industrial equipment, with *standard* model Friction Clutches for fractional to 1325 hp, and *standard* model Fluid Drives for ¾ to 850 hp. *Applicable to all types motor or engine book-ups,* through a wide selection of input, output combinations.

TWIN DISC
TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois
BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

If you write maker identify as **IEN - 9200**

first with hermetically sealed receptacles

. . . and still the leader for true hermetically sealed plugs and receptacles . . . pin or socket insert assemblies . . . in a variety of "AN" (Air Force-Navy) and Cannon K and KK shell sizes. Square, circular, or hex flanges with locknuts for panel mounting. Many insert arrangements available. Standard shell finish now combines copper flash, heavy cadmium plate and tin plate. Steel shells and contacts. Vitreous insulators fuse contacts to the shell to provide perfect hermetic seal.

IN PIN AND SOCKET INSERT ASSEMBLIES

Write for Hermetically Sealed Connector Bulletins. Cannon Electric Company, 3209 Humboldt Street, Los Angeles, California. Factories in Los Angeles; East Haven; Toronto, Canada; London, England. Representatives and distributors in all principal cities.

Refer to Dept. 112

CANNON ELECTRIC *Since 1915*

If you write maker identify as **IEN - 9201**

New...Free... Complete...

book on electrical controls for automatic operation

Here's a 20-page book for you, Mr. Original Equipment Manufacturer, you, Mr. Contractor, and you, Mr. Plant Electrician. Find out how Westinghouse products can contribute to more automatic operation—whether in metal-working production equipment, processing equipment or handling equipment. Westinghouse Motor Controls give greater dependability, less maintenance down time, longer productive life through simpler design, standardization of components, greater accessibility to parts, and so on. A full line of controls and your Westinghouse Representative are at your service.

Write for B-5882, Westinghouse Electric Corp., P.O. Box 868, Pittsburgh 30, Pennsylvania. J-30174

YOU CAN BE SURE...IF IT'S Westinghouse

Westinghouse Electric Corporation
3 Gateway Center, Pittsburgh 30, Pa.

Please send me Motor Control Book, B-5882.

Name _____

Company _____

Address _____

City _____ State _____

NEW LITERATURE—*Concluded*

If you write maker identify as **IEN - 0773**

STAINLESS TUBE . . Welded from cold-rolled stainless-steel strip in sizes from ⅜ to 3 in. od. for tube and ⅛ to 2½ in. pipe sizes. Bulletin, "Specialists", 8 pages. Damascus Tube Co., Dept. IEN, Greenville, Pa.

If you write maker identify as **IEN - 0774**

STEAM TURBINE . . Type YR is for mechanical drive maximum at about 600 to 2,000 hp. for applications such as pumps, compressors, generators. Bulletin H-22, 16 pages, shows construction. Elliott Co., Dept. IEN, Jeannette, Pa.

If you write maker identify as **IEN - 0775**

VALVE OPERATORS . . Power cylinder opens or closes a plug valve under valve control. Operating medium can be air, oil, gas or water. Schematic circuits in 8-page Bulletin 3020 along with torque ratings. Ledeen Mfg. Co., 1600 S. San Pedro St., Dept. IEN, Los Angeles 15, Calif.

If you write maker identify as **IEN - 0776**

OPERATING VALVES . . Shear-Seal manual and solenoid valves for pressures to 6,000 lb., described by flow patterns and cut-away views. Catalog 4-G, 36 pages, also describes Meletron pressure switches, groups them in a chart. Barksdale Valves, 5125 Alcon Ave., Dept. IEN, Los Angeles 58, Calif.

If you write maker identify as **IEN - 0777**

REGULATING VALVES . . Pressure regulators, temperature regulators, combination units, float valves, relief valves, also diaphragm, solenoid, motor-operature units. Fortieth Anniversary Catalog, 56 pages. O. C. Keckley Co., 400 W. Madison St., Dept. IEN, Chicago 6, Ill.

If you write maker identify as **IEN - 0778**

ARC WELDING . . Inert gas shields a tungsten arc in the Heliwelding process for stainless steel, aluminum, copper alloys, other metals. Hand and automatic equipment in 16-page Catalog 2300, also electrodes. Air Reduction Sales Co., 60 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 0779**

WELDING POSITIONERS . . Four models have capacity to 35,000 lb., enable the operator to do downhand welding. Bulletin PL-2, 16 pages, gives details, presents a chart on downhand welding efficiency. Harnischfeger Corp., 4400 W. National Ave., Dept. IEN, Milwaukee 46, Wis.

If you write maker identify as **IEN - 0780**

WINDING . . Constant tension is exerted on the rewind roll of wire or web material by the company's Alquist unit, which senses torque increase as the roll builds up and cuts down shaft speed in proportion. Bulletin 205, 4 pages. Hobbs Mfg. Co., 26 Salisbury St., Dept. IEN, Worcester 5, Mass.

If you write maker identify as **IEN - 0781**

COIL WINDING . . Machines to wind toroidal, transformer, bobbin, solenoid, armature, resistor coils include types for random, single-layer, multiple-layer, variable-pitch, space-wound, lattice-wound windings. Catalog 54, 46 pages, also presents accessories such as a wire scraper. Geo. Stevens Mfg. Co., Pulaski Rd. at Peterson, Dept. IEN, Chicago 30, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 9203**

IMPROVED QUALITY—LOWER COST

TURNABOUT®

ADJUST • A • FORK

HYDRAULIC LIFT TRUCK

with interchangeable forks

Improved design . . . mass production techniques, give you a quality product, **properly priced.** Proven superior performance . . . extra strength . . . highly maneuverable . . . easy operation. Resinoid type casters and aluminum leader wheels at no extra cost.

Easily interchangeable forks available in five standard lengths. Adjustable on truck frame to provide 25" or 27" width.

Unconditionally guaranteed for one year Write for descriptive bulletin

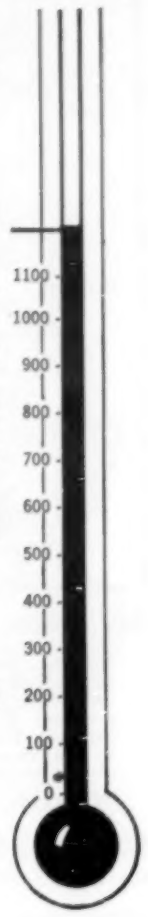
RACK HYDRAULIC EQUIPMENT CORPORATION

CONNELLSVILLE, PENNSYLVANIA

AGENTS IN PRINCIPAL CITIES UNITED STATES CANADA EUROPE

If you write maker identify as **IEN - 9204**

INSULATION FOR SOAKING HEAT EFFICIENCY UP TO 1250°F



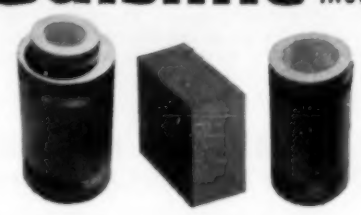
Ruberoid's molded calcium silicate insulation withstands a soaking heat indefinitely up to 1250°F. It is not soluble in water, normal acids or alkalis. Moisture won't affect its efficiency or appearance. Calsilite, in pipe covering sections and flat blocks, offers single layer efficiency and application economy. Get all the facts. Write The Ruberoid Co., 500 Fifth Ave., New York 36, N. Y.

The RUBEROID Co.

Asphalt & Asbestos Building Materials

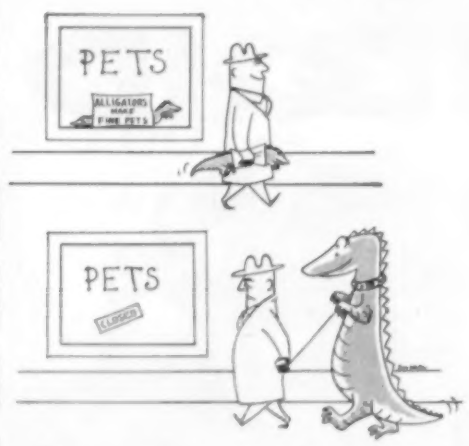
Send for data folder on

Calsilite INSULATION



If you write maker identify as **IEN - 9205**

things to watch for when buying alligators . . .



But if you're buying special purpose STEELS, may we recommend the **SPEED STEELS**

SPEED CASE	a low carbon free machining open hearth steel
SPEED TREAT	a medium carbon free machining open hearth steel
SPEED ALLOY	a chromium alloy steel

briefly they

- are easy to heat-treat
- are fast machining
- give longer tool life
- produce better finishes

THERE ARE SPEED STEEL SPECIALISTS IN . . .

☐ Akron, Ohio	Burger Iron Co.
☐ Bridgeport, Conn.	Bridgeport Steel Co.
☐ Buffalo, N. Y.	Beals, McCarthy & Rogers
☐ Cambridge (Boston), Mass.	Brown Wales Co.
☐ Chicago, Ill.	W. J. Holliday & Co., Inc.
☐ Dallas, Tex.	Earle M. Jorgensen Co.
☐ Detroit, Mich.	Peninsular Steel Co.
☐ Hammond, Ind.	W. J. Holliday & Co., Inc.
☐ Houston, Tex.	Earle M. Jorgensen Co.
☐ Indianapolis, Ind.	W. J. Holliday & Co., Inc.
☐ Lewistown, Me.	Brown Wales Co.
☐ Los Angeles, Calif.	Earle M. Jorgensen Co.
☐ Memphis, Tenn.	Pidgeon-Thomas Iron Co.
☐ Newark (New York), N.J.	Grammer, Dempsey & Hudson, Inc.
☐ Oakland (San Francisco), Calif.	Earle M. Jorgensen Co.
☐ Philadelphia, Pa.	Horace T. Potts Co.
☐ Toronto, Ontario	Peckover's, Ltd.
☐ Tulsa, Okla.	Earle M. Jorgensen Co.

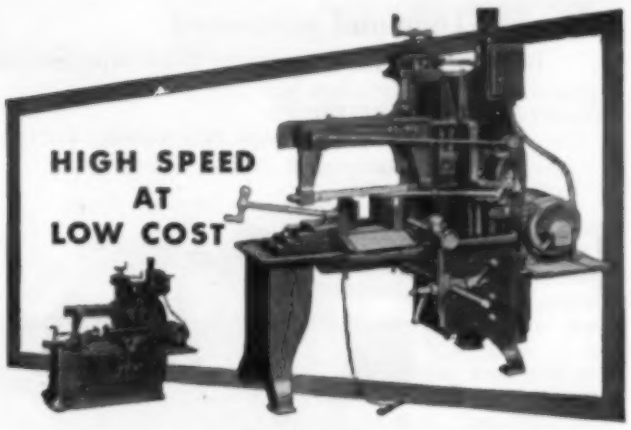
W. J. Holliday & Co., Inc.

141 141st STREET • HAMMOND, INDIANA

Speed steels are produced by W. J. Holliday & Co., Inc.,

Speed Steel Plate Division

If you write maker identify as IEN - 9207



For tool room, stockroom, or maintenance shop, this 6" x 6" capacity hack saw is ideal when you want speed, accuracy, and economical operation at lowest possible investment.

Embodies similar design principles and features of MARVEL heavier duty production saws. Its shaper-link action that provides quick return stroke, and its heavy pressure screw feed are two exclusive MARVEL features that provide FASTER cutting than can be obtained with any other metal saw in its price class.

Single speed, 2-speed, and 4-speed models are available, to suit all types of applications where materials of different hardness and alloy characteristics are to be cut. Cabinet base or open-leg base are optional.

MARVEL Metal Cutting SAWS
Better Machines-Better Blades

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

If you write maker identify as IEN - 9208

"TEFLON" SEALING

Exclusively at Graef Engineering Company

Seal maintains all the desirable properties of "TEFLON"
Extreme chemical resistance
High temperature stablity
Superior electrical properties
Non-adhesion
Allows fabrication from "TEFLON" film

POTENTIAL APPLICATIONS

"TEFLON"	"TEFLON"
bonded to "TEFLON"	bonded to Metal
Bags and Sacks	Valve Discs
Tank Liners	Vat Liners
Containers	Capacitors
Protective Clothing	Protective Coatings
	Heat Sealers

Write us for full details

GRAEF ENGINEERING COMPANY
P. O. Box 416
Paramount, California

If you write maker identify as IEN - 9209

DIAPHRAGMS

FOR ALL INDUSTRIAL APPLICATIONS

One of Acushnet's many specializations is in the field of diaphragms. We have achieved notable success in the design, development and molding of all types of diaphragms, with or without fabric inserts, from the size of a dime up to three feet in diameter.

Special stocks are expertly compounded with properties to resist various fluids and gases, extreme high or low temperatures, or combinations of these requirements. We are equipped to produce rubber diaphragms bonded to metal.

Acushnet PROCESS COMPANY

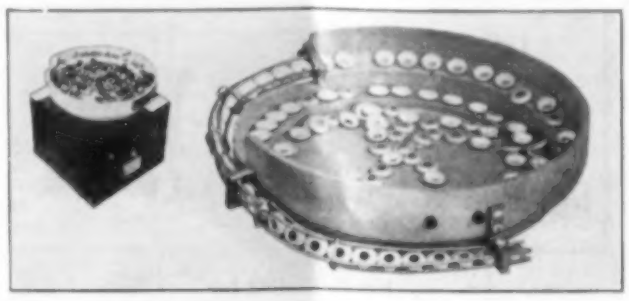
Send for your copy of the Acushnet Rubber Handbook, a comprehensive rubber data reference for all types of molded rubber parts.

Address correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 9210

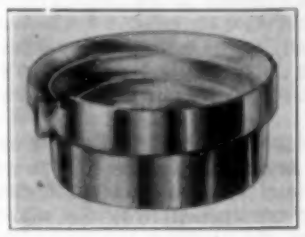
Feeding - Electric vibrating unit advances work pieces on circular path

Source: PERRY EQUIPMENT & ENGINEERING CO.
3125 Brandes St., Dept. IEN, Erie, Pa.



Bulletin, "Vibratory Feeders"

This description "repeats" our previous description, IEN-6238-54, to correct an error in which we referred to "laboratory" feeders rather than "vibratory" feeders as we should have done. New development in the line is centered in the hard chromium plated bowl that has been added to provide work paths that will not wear smooth and will retain their original finish for sustained operation on a predetermined setting. The new bowl is made of cast aluminum alloy. Special bowls also are available coated with cured rubber to handle fragile and delicate parts.



Chromium plated

The feeder on which the bowl is mounted sets up rotary vibrating action that causes work pieces in the bowl to move toward the outer circumference and proceed along a circular path, just inside the outer rim, for delivery at a preselected point. One or more paths can be built into the bowl. The paths themselves can be designed so they will shed pieces back into the bowl if they are not being moved along right side up.

Four vibrator sizes have bases measuring 5 by 5 in. to 22 by 22 in. and height at 5½ to 14 inches. The smallest unit takes a 6-in. bowl. The largest one is standard with a 24-in. bowl. List price, with the bowl assembled, is $200 to $825. Developed assemblies, representing units that are completed for selected feed to specification, are available at $250 and to $875 and up. Standard operation is on 110-volt 60-cycle ac. Other voltages can be specified.

The company is prepared to design and build the equipment to handle specified parts for delivery in specified positions and at desired rates.

If you write maker identify as IEN - 9211

Tumbling - Abrasive compounds for burnishing and heavy duty burring

Source: ALMCO SUPERSHEEN
Dept. IEN, Albert Lea, Minn.

Technical data upon request

Number 41 is one of two new compounds for use in the company's tumbling equipment. It has been developed to burnish aluminum, brass, copper, zinc. Compound No. 58, the second of the two new materials, is a coarse heavy duty abrasive for burring and grinding operations. It will not foam when employed in long wet runs in the tumbling equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

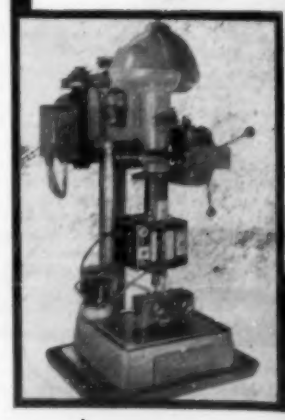
If you write maker identify as IEN - 9212

Commander LEAD-MATIC Tapper

Automatic Tapper with Lead Screw
FOR HIGH PRODUCTION PRECISION TAPPING

- Precision Ground Lead Screws Assure Finest Threads
- Electrically Controlled Cycle or Jog Tapping Action
- Hand, Foot or Fixture Switch Control
- Easily Adapted to Any Drill Press
- Range #0 to ¾"

Built for high production tapping . . . precision or otherwise, the Commander Lead-Matic Tapper makes any drill press a precision tapping unit, even with inexperienced operators. Electric control of Cycle or Jog tapping action provides versatility to handle any job . . . automatic tap reversal eliminates drill press motor reversing and speeds tapping. Compact, ruggedly built, easy to operate, the Commander Lead-Matic Tapper will cut your tapping costs and reduce rejects to a minimum.



Write for illustrated circular and name of nearest Distributor

Commander MFG. CO.
4219 W. KINZIE ST. • CHICAGO
PRODUCT OF COMMANDER . . . BUILDER OF PRODUCTION TOOLS

If you write maker identify as IEN - 9213

Get time-saving flexibility, longer life, cooler operation, minimum deflection with AMPCO-WELD* Ejector Holders

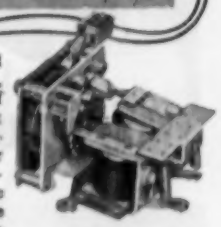
HERE'S real flexibility! Ampco-Weld offset ejector and universal ejector resistance-welding holders have interchangeable sockets for No. 1 and No. 2 Morse tapers. Tapers are quickly changed without changing holders. They last longer — no reaming necessary. They're leak-proof. They're made from high conductivity Ampco alloys, which stay cooler in operation, and minimize deflection by greater strength.

All Ampco-Weld products meet RWMA specifications. Order today for longer runs, fewer rejects, lower costs. *Reg. U. S. Pat. Off.

RW-14

AMPCO Ampco Metal, Inc.
Dept. IE-8, MILWAUKEE 46, WISCONSIN
West Coast Plant • Burbank, California

If you write maker identify as IEN - 9214



SERIES M.E.R. Guardian Midget Electrical Reset Stepper keeps the reset magnet open, allows the ratchet to reset freely on a pulse of 10 milli-seconds. Stepping magnet releases lock mechanism on first step to ready unit for re-cycle. Standard unit has one disk with one finger rotating counter-clockwise. Two fingers available. Up to 21 of total 24 points on disk are active. Rated at 10 steps per second. Voltage ranges: 6 v. to 115 v. A.C., 60 cycles, or 6 v. to 110 v. D.C. Auxiliary small combination contact switches can be mounted on ratchet or on either magnet. New 3-point mounting for easy installation.

SERIES M.A.S. Stepper. A compact dependable Add and Subtract unit.
SERIES M-120 Stepper. Up to 3 position contact combinations.

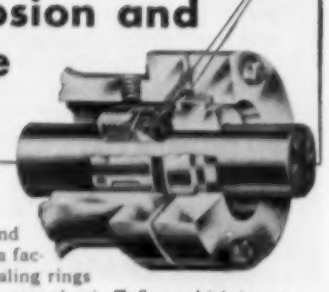
Write for catalogs featuring Guardian Steppers, Relays, Solenoids, Switches, Solenoid Contactors and Hermetically Sealed Controls.

GUARDIAN ELECTRIC
1620-J W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 9215

NEW JOHN CRANE mechanical seal with TEFLON*

Solves Corrosion and Temperature Problems...



With the new Type 9 John Crane Mechanical Seal, proper sealing of chemicals and corrosive liquids is no longer a factor. Its flexible wedge and sealing rings are molded of the remarkable new plastic Teflon, which is not affected by any industrial chemical.

The successful development of two years research and field testing, this revolutionary seal handles corrosive liquids never before controlled effectively by conventional, flexible type mechanical seals. Thus, John Crane designing experience is effectively combined with the unique properties of Teflon: chemical inertness, extremely low friction and high heat resistance. Type 9 Seal can be employed at temperatures up to 500°F.

SEND FOR BOOKLET: *containing full details on the Type 9 Seal.*

Crane Packing Co., 1815 Cuyler Ave.
Chicago 13, Ill.
In Canada: *Crane Packing Co., Ltd., 617 Parkdale Ave., N., Hamilton, Ont.*

*DuPont's trademark

JOHN CRANE CRANE PACKING COMPANY

If you write maker identify as IEN - 9216

Now A REAL . . . HUSKY . . . FULL SIZE SPECIFICATION SWITCH BUILT TO DO A FULL SIZE JOB CONTINUOUSLY

P&S 20AC1

IF you need switches that can be used at full rated capacity on fluorescent and incandescent loads

IF you need switches that stand up under continuous heavy duty use

IF you want to cut down replacement costs on heavy duty circuits

YOU'LL LIKE THE WAY P&S A.C. SUPER SWITCHES HANDLE THE JOB

Both 15 and 20 Amp. types can be used on 120 V. to 277 V. fluorescent and incandescent loads at full rated capacity — can be used on motor loads up to 277 V. at 80% of switch rating.

Extra large silver alloy buttons will not oxidize under constant service, keeping temperature rise (common cause of switch failure) at a minimum.

Sturdy, totally-enclosed bodies — Easy back or side wiring — built "to take it." S.P., D.P. and 3-W, Ivory and Brown, 15 and 20 Amp. types, A.C. only.

For complete information write Dept. IN

PASS & SEYMOUR INC. SYRACUSE, N. Y.
OFFICES: 71 Murray St., New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

If you write maker identify as IEN - 9217

keep costs down

with accurate job time records

CALCULAGRAPH

FIGURES ELAPSED TIME ACCURATELY

PRINTS DATE
STARTING TIME
FINISHING TIME
TOTAL ELAPSED TIME

Keep production costs in line with automatically computed, precision Calculagraph job time records. Just stamp card at beginning and ending of the operation. Calculagraph prints date, starting and finishing time plus precision calculated elapsed time. One Calculagraph can record and compute job time data for one entire shop or department by handling any number of cards in any sequence. Accurate, printed Calculagraph records can be filed for future use in estimating on new orders and checking production efficiency. Calculagraphs are low in cost, practically maintenance-free and built for a lifetime of dependable service.

COUPON BRINGS FULL INFORMATION
— FILL IN AND MAIL TODAY!

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

300

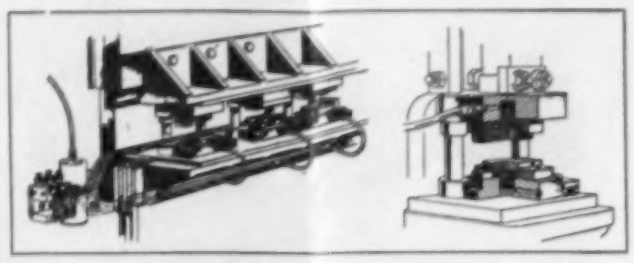
Send complete data on Calculagraph to:

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 9219

Press Tools - Blank holder and stripper, operates hydraulically

Source: DIE-DRAULIC GRIP INC.
528 Butterworth, Dept. IEN, Grand Rapids 4, Mich.



Patent applied for

One or more hydraulic pistons, built into a die employing this new Barrett Die-Draulic Grip, receive hydraulic pressure from a small reservoir. Pressure build up is from a shop air line at about 100 pounds. The pistons operate against a steel pad. When the press ram starts downward the pistons move also to build up pressure to a pre-determined point around the forming area of the metal blank or strip being worked on. This pad pressure can be "locked" at the bottom of the stroke and released after the punch has returned upward. The equipment eliminates the need for springs in blank holding and stripping operations.

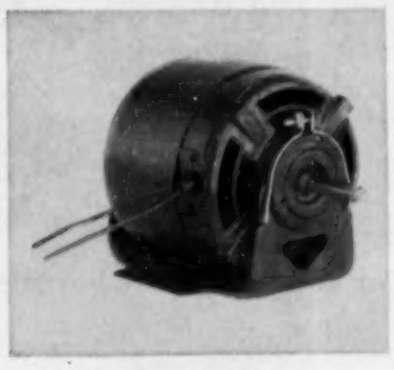
The pressure cylinder is preloaded with air above the hydraulic oil so gripping action begins the instant the punch makes contact with the work and remains constant during the press cycle. No oil or air is expelled from the sealed circuit. At the end of the stroke, the pressure is tripped and the pads return to normal position.

A single unit measures about 7 in. in width by 5 in. in depth by 10 in. in height and weighs 8 pounds. List price is $275 for a standard two-piston unit and 3 ft. of hydraulic hose.

If you write maker identify as IEN - 9220

Motor - Shaded pole design, resilient mounting, ratings to 1/10 hp.

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Clamps in place

Smooth, quiet operation characterizes this new design of the company's KSP motor. It is equipped with a ½-in. shaft to provide rigidity for long, single and double shaft drives. It is available in four and six-pole construction for operation at 1,550 or 1,050 rpm. on 60-cycle 110-volt input. The leads are 20 in. in length. Two shaft heights are available at 2⅝ and 3½ inches. The resilient mounting rings are 2¼ and 2½ in. in diameter.

The motor can be positioned at any angle and is suited particularly for use on air conditioners, unit heaters and coolers, exhaust circulating fans, furnace blowers, evaporative coolers, window fans.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9221

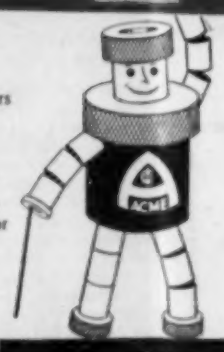
Carry Your Inspection to the Machine with Acme's New Portable

BENCH CENTERS

ONLY 18" OVERALL • WEIGHT ONLY 19½ LBS.

Use Magnetic or Standard Indicators Directly on the Bed Area
•
Easily sets on Angle Plates for Vertical or Angular Checks
•
Fits any 12" Surface Plate

Available with Fixed or Retractable Centers Full or Cut Down
•
Save Time and Money
•
Avoid Rejects
•
Speed Production
•
Order Now!



Drill Jig and Fixture Bushings • Roughness Comparison Specimens • Dowel Pins

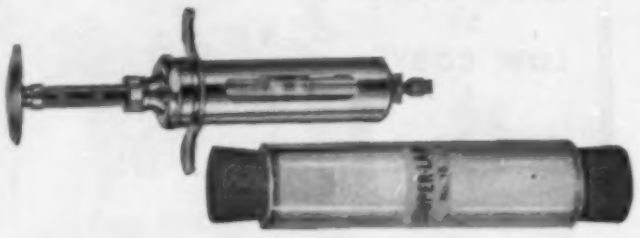
Chamfer Micrometer Gages • Hardened and Ground Precision Parts • Flat Lapping

ACME INDUSTRIAL COMPANY
215 N. LAFLIN ST.
CHICAGO 7, ILLINOIS

If you write maker identify as IEN - 9222

Lapping - Diamond compound is handled in a syringe type applicator

Source: ACME SCIENTIFIC CO.
1450 W. Randolph St., Dept. IEN, Chicago 7, Ill.



Bulletin 143

Super-Lap is a new paste form of precisely graded diamond particles. The paste is available in four grades distinctively colored, Yellow No. 3 or 8,000 mesh for extremely high superfinishing, Red No. 6 or 3,000 mesh for high finish and medium cutting action, Green No. 9 or 1,800 mesh for good cutting and high luster finish, Blue No. 15 or 1,200 mesh for fast cutting with good luster.

The paste is packaged in a glass cartridge fitted with stoppers at both ends. Two sizes hold 15 and 18 grams. The stoppers are removed and the cartridge applied in the syringe type applicator to feed the paste without danger of contamination or waste of diamond compound.

If you write maker identify as IEN - 9223

Metal - High density material is 60 per cent heavier than lead

Source: FIRTH-STERLING INC.
3113 Forbes St., Dept. IEN, Pittsburgh 30, Pa.

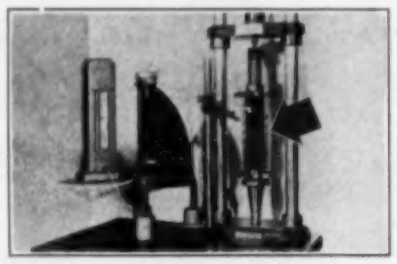
Technical data in Bulletin 101

Heavy Metal is a new combination of tungsten with small amounts of nickel and copper to aid machinability. It has a specific gravity of 17.5 to 18.2. It is available to 20 in. in diameter by 18 in. in height or an equivalent volume to a maximum of 3,500 pounds.

Typical applications include counterweights, accelerometers, balancing weights, radium caskets, X-ray tube screens, electrical contacts, gyroscope rotors, vibration dampers, flywheels, anvils for hot extrusion and upsetting.

If you write maker identify as IEN - 9224

Illustrated in setup for accuracy checking is a new assembly of 56 carbide tipped slitting saws for a multiple slotting job. The check showed accumulative error within 0.0015 inch. Each saw blade was diamond lapped. Side milling cutters, on the two sides of the saw assembly, machine the work to length while the slotting operation is in progress. Gay-Lee Company, 71 W. 14-Mile Road, Dept. IEN, Clawson, Mich., manufactures the saws and arbor assemblies to order.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9225

New 2 in 1 Achievement
FAIRBANKS
PATENTED
STEP-TRUK
Combination hand truck and step ladder

Does so many jobs, so well, you wonder how you got along without this time and labor saver.

As a hand truck with curved crossbars and a solid nose plate it handles boxes, cartons, cases, kegs, and bags.

As a step ladder it fulfills all the conventional uses of a step ladder such as washing windows, painting, light carpentry work, replacing bulbs in overhead fixtures, and general maintenance work.

In **combination** the Fairbanks STEP-TRUK applications are limitless: stock truck in stock rooms and warehouses where merchandise can be delivered to bins and then stocked in bins beyond reach; for a hand truck on delivery trucks where the driver can use it to climb onto the tailboard and after laying out his packages, use the hand truck to complete the delivery.

Moving ash barrel | Moving boxes | Climbing to bins | Climbing to ceiling fixtures

Yours on request: Fairbanks STEP TRUK catalogue sheet complete with specifications.

THE Fairbanks COMPANY
General Office: 393 Lafayette Street, New York 3, N.Y.
New York 3, N. Y. • Boston 10, Mass. • Pittsburgh 22, Pa. • Rome, Ga.
Valves • Trucks • Casters • Wheels • DART & Pop Unions

If you write maker identify as IEN - 9226

Pump - Portable centrifugal to handle cleaning solvents from drums

Source: MARLOW PUMPS
Box 556, Dept. IEN, Ridgewood, N. J.

Trouble free

The impeller in this new Marlow GEM self-priming centrifugal pump is mounted directly on the shaft of the ¼ or ⅓-hp. motor. Inlet and outlet are equipped with ¾-in. hose adaptors. A carrying handle completes the assembly. The pump is the company's self-priming design. It will start and operate continuously at elevation to 15 ft. above the liquid supply. It will handle small solids entrained in liquid. The motor shaft is fitted with self-lubricating mechanical shaft seal. The user supplies the ¾-in. solvent resistant hose lines.

If you write maker identify as IEN - 9227

Painting - Breathing type mastic covers insulation on heated equipment

Source: EARL PAINT CORP.
240 Genesee St., Dept. IEN, Utica 2, N. Y.

Technical data in Bulletin 15

Erkote 6X has been developed for application as a weather barrier on all types of insulation employed on heated equipment. It permits the insulation to dry out without damage to itself. It contains no water and so cannot initiate corrosion of supporting bands or wire employed to hold the insulation in place. It remains flexible and will not dry out or crack during thermal changes.

It is applied by spray, or a trowel, at the rate of 8 to 10 gal. per 100 sq. ft. or surface area for a coating ⅛ in. in thickness. The finished coat is resistant to attack by acids, alkalis, hot moist vapor. It will not support combustion or contribute to flame spread, after a reasonable curing interval.

If you write maker identify as IEN - 9228

Welding - Arc electrode holder, 300 amp., employs glass fiber handle

Source: ERICO PRODUCTS INC.
2070 E. 61st Place, Dept. IEN, Cleveland 3, Ohio

Light and husky

Arc radiation, moisture, mechanical abuse cannot harm the glass fiber handle of this new Type B-20 electrode holder. The handle is molded with longitudinal grooves for a firm grip and resistance to twist. The ridges also minimize contact area for heat transmission. The holder weighs 14 ounces. It is rated for continuous duty with $\frac{1}{16}$ to $\frac{3}{16}$ in. electrodes and for intermittent duty with ¼-in. electrodes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9230

Polishing - Automatic machine mounts work on spindles on index table

Source: HAMMOND MACHINERY BUILDERS INC.
1607 Douglas Ave., Dept. IEN, Kalamazoo, Mich.

For a production line

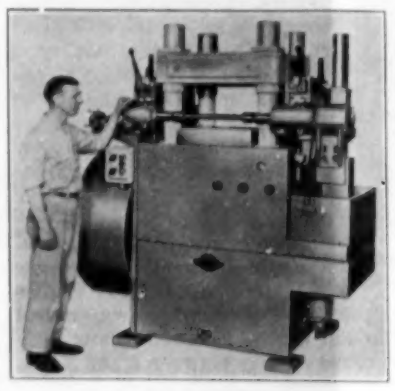
Seven spindles are mounted vertically in the 62-in. indexing table in this new automatic machine. The spindles are driven by a ¾-hp. motor with variable speed control for a range from 15 to 45 rpm. or 50 to 150 rpm. The spindle drive is independent of the Geneva controlled indexing operation by which the spindles are advanced, one station at a time, from the loading station at the front to working position at the six motor driven wheel heads positioned around the table unit.

The spindle, at the operator's position, is held stationary by a brake and is assisted to start rotating by means of this same brake as it is indexed into the moving table chain. Index movement requires one second. Dwell, between intervals of indexing, can be varied for an operating range of 150 to 1,700 index movements per hour. A tapered lock bolt engages the table to hold it in indexed position. The lock bolt is pulled by a cam on the Geneva shaft. Weight, with six head and stand units, is about 11,500 pounds.

If you write maker identify as IEN - 9231

Press - Four column mechanical for high speed production, 75 ton

Source: ALPHA PRESS & MACHINE INC.
9281 Freeland Ave., Dept. IEN, Detroit 28, Mich.



Folder on request

Control centers at an air operated clutch and brake with which this new press can be inched or set for single or continuous operation at a maximum speed of 300 strokes per min. based on a 1-in. stroke. Maximum stroke length is 4 in. with clearance between the columns at 19 in. right to left and 15 in. front to back. Additional sizes can be ordered in multiples of 6 in. variation in the right to left dimension. The front to back dimension remain constant.

Equipment includes strip stock feeds, pull out rolls and a scrap cutter. Lubrication is by force feed. Actuation of the clutch and brake are by electrical means. Point loading, to the rating of 75 ton, can be handled anywhere along the right to left center line of the machine. It will handle unbalanced dies without distortion. Shut height adjustment, at the top of the press, permits leveling the upper ram with reference to the bolster plate.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9234

BARBER COLMAN

Wheelco Flame-otrol

Fully protects oil and gas fired equipment against flame-failure hazards

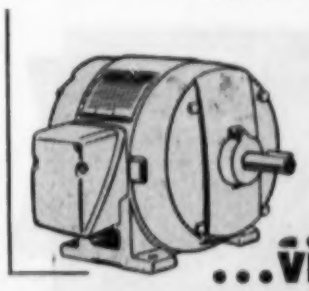
Recommended by Safety Engineers!

•Detects flame failure faster and surer because it's *electronic.* Leads in choice of detection and control systems available for best performance under all hazardous conditions. Allows for normal variations in combustion and eliminates nuisance shut-downs. Recommended by safety engineers everywhere as the most positive, dependable protection for oil- and gas-fired heating equipment. Write for Bulletin F2-3.

WHEELCO INSTRUMENTS DIVISION
BARBER-COLMAN COMPANY, DEPT. H, 1516 ROCK ST., ROCKFORD, ILL.

If you write maker identify as IEN - 9235

NEW GE TRI 55 CLAD MOTOR ...via Graybar



Here's the *all new* GE Tri-Clad "55" . . . and it's available via Graybar. A new insulation system . . . new bearing system . . . new ventilation system makes the Tri-Clad "55" a leader in modern motor design. Now available in 1, 1½ and 2 hp ratings—to order, just call your local Graybar Representative.

FREE 16-page booklet describes features

Send for your copy, today—see for yourself how the TRI-CLAD "55" offers you better performance, easier installation, less maintenance. Booklet also gives complete breakdown of new smaller motor dimensions. *Graybar Electric Co., Inc., 420 Lexington Ave., New York 17, N. Y.*

Call Graybar *first* for . . . Everything Electrical · Graybar Electric Company

432-128

If you write maker identify as IEN - 9229

CAN THESE CHARACTERISTICS IMPROVE YOUR PRODUCT?

Strength ★ Beauty ★ Light Weight
Durability ★ Workability

MET-L-WOOD METAL BONDED TO PLYWOOD
has them ALL!

Met-L-Wood is metal bonded permanently to plywood to create a material of real versatility for industrial engineers and designers. Many different metals, woods, shapes and finishes are available in Met-L-Wood to meet your needs—from table tops to moisture-vapor-proof rooms...And Met-L-Wood Engineering Service is yours for the asking. Write for the bulletin described below for details

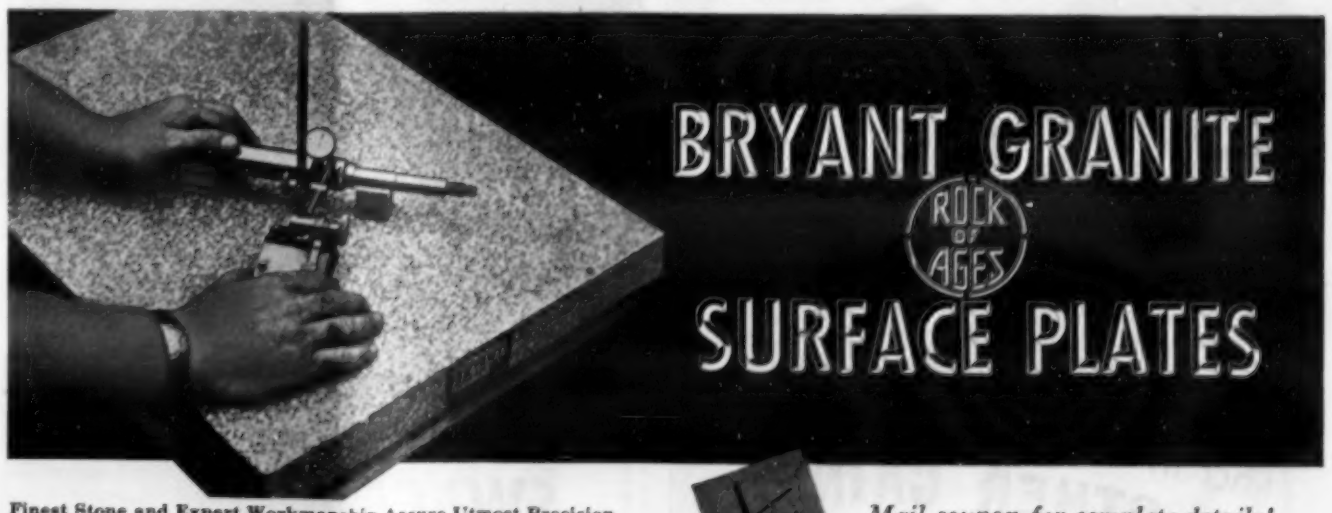
FREE TECHNICAL DATA BOOK

Met-L-Wood Bulletin 521 contains technical data, application photos and facts to help you visualize the possibilities and economies of Met-L-Wood. Send for your copy now.

Write for Bulletin 521

MET-L-WOOD CORPORATION
6755 West 65th St., Chicago 38, Illinois

If you write maker identify as IEN - 9232



Finest Stone and Expert Workmanship Assure Utmost Precision

Every Bryant Granite Surface Plate is doubly guaranteed — by Bryant, maker of precision machine tools and gaging equipment, and by the world-famous Rock of Ages quarry.

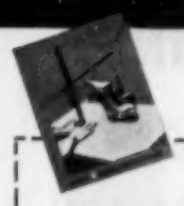
Bryant *unconditionally* guarantees every plate for flatness and accuracy. Rock of Ages guarantees the granite itself, in regard to perfect grain, close-knit composition and flawless texture.

Every plate is finished on the head of the grain, a patented process . . . and manufactured by skilled, painstaking Vermont craftsmen.

Bryant surface plates offer you the means of utmost precision in your layout, inspection and assembly work . . . plus maintenance-free qualities and enduring accuracy at low initial cost.

BRYANT CHUCKING GRINDER CO. · Springfield, Vt. · U. S. A.

Internal Grinders • Boring Machines
Internal & External Thread Gages • Granite Surface Plates



Mail coupon for complete details!

BRYANT CHUCKING GRINDER CO.
Springfield, Vermont

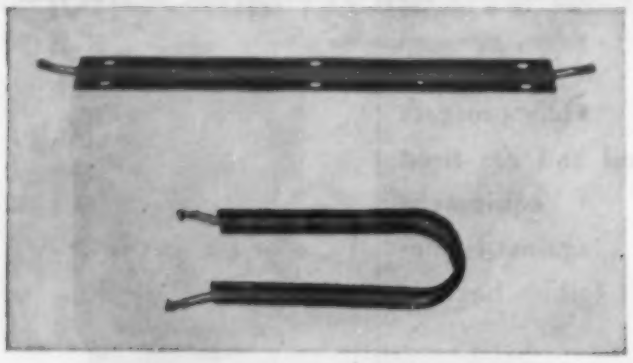
Gentlemen:
Please send me your free folder describing Bryant Granite Surface Plates.

Name _____ *Title* _____
Company _____
Street _____
City _____ *Zone* ____ *State* _____

IE

If you write maker identify as IEN - 9236

New Vane-type Calrod* Heater



For heating flat and circular surfaces

The G-E Vane-type Calrod heater is *formable* and can be cupped for heating circular surfaces.

The sturdy Calrod unit in this heater is bonded to a wide 1¾-inch radiating surface and is available in lengths from 20 to 100 inches. Fast, even heat transfer to the vane is provided by a strong, copper-brazed joint which runs the full length of the heater.

FREE APPLICATION BULLETIN

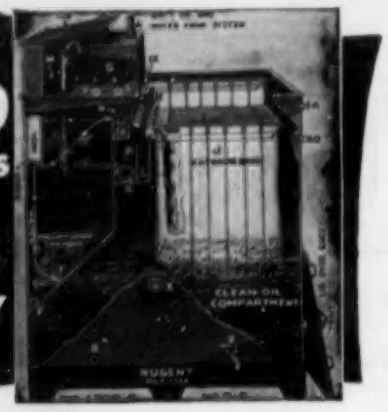
G.E. offers a new "Handy Selector Guide for Surface Heating." For your copy write today for GEA-6146, Section 720-140, General Electric Company, Schenectady 5, N. Y.

*Reg. Trade-mark of the General Electric Company

GENERAL ELECTRIC

If you write maker identify as IEN - 9237

98% SAVINGS in Lube Oil with NUGENT GRAVITY FILTERS



NUGENT GRAVITY FILTERS are widely used to supply continuously clean oil in turbine lubrication systems. They filter out dirt, carbon, water and harmful impurities without changing the original characteristics of the oil. They are built in standard capacities from 20 to 2,000 GPH. The only moving element is the oil itself, thus the greatest economy is effected—no power cost—no breakdowns or costly maintenance. Cleaning time averages five minutes per bag.

Write for bulletin

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS
Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . Representatives in Principal Cities

If you write maker identify as IEN - 9238

44% FEWER ACCIDENTS

reported by plant managers, after installing tests to make sure each employee's eyes are *working efficiently TOGETHER*

and in addition, **OTHER GAINS:**

20% reduction in spoilage . . . 14% increase in production . . . 45% saving in training costs . . . less absenteeism.

These employers have found that **NO plant can afford workers with UNHAPPY EYES.** Mail the coupon for details.

KEYSTONE VIEW CO., MEADVILLE, PA.
☐ PLEASE ARRANGE FOR DEMONSTRATION of Occupational Visual Service.
☐ SEND BOOKLET "What your plant can accomplish with Vision Screening."
(Name) .....
(Company) ..... (City) .....

If you write maker identify as IEN - 9239

Drive - Induction motor with hydraulic coupling and reducer

Source: REULAND ELECTRIC CO.
Mission Road, Dept. IEN, Alhambra, Calif.

Compact

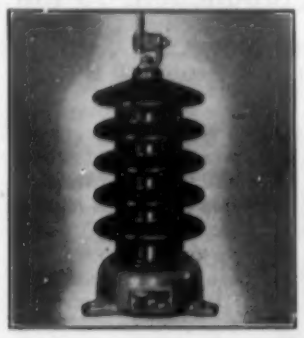
New assembly of motor, hydraulic coupling and worm type speed reducer provides a means to drive loads that require smooth gradual acceleration such as mixers, conveyors, centrifugal equipment, cranes. Ratings are ⅓ and ½ hp. in a 66W motor frame, ¾ and 1 hp. in a 204W frame, 1½ hp. in a 225W frame and 2 hp. in a 254W frame. Speed reduction is available in a range from 24 to 140 rpm. The assembly can be ring or foot mounted in any one of 16 positions.

The hydraulic coupling remains disengaged until the motor is practically up to full speed and so protects it against starting overloads. Action of the oil in the coupling picks up the load easily to cushion shock. The gradual pick-up permits a smaller motor than might otherwise be required. The assembly represents further development of the combination of induction motor and hydraulic coupling without the speed reduction, previously described IEN-13401-53.

If you write maker identify as IEN - 9240

Static Eliminator - Protects equipment against lightning discharge

Source: OHIO BRASS COMPANY
100 Surrey Road, Dept. IEN, Mansfield, Ohio



Base mounted

Thorex RM is a new valve type lightning arrestor to protect rotating equipment such as motors, generators, synchronous condensers, the ac. side of rotary converters, dry-type transformers, and older pieces of oil insulated apparatus against lightning discharge. The new unit features low spark-over and IR discharge voltage characteristics. The porcelain top construction permits close spacing for application where mounting clearance is limited. Application can be indoors or within weather proof enclosures where water shed action is not essential. The unit can be mounted in any position. There are 14 line to ground ratings between 3 and 27 kv.

If you write maker identify as IEN - 9241

Flexible Steel Lacing Co., 4607 Lexington St., Dept. IEN, Chicago 44, Ill., has assembled a set of tools including socket wrenches, boring punches, templates, belt cutters and bolt type plates to join the ends of a conveyor belt. The tools are employed with standard impact wrenches. The company has prepared a Bulletin F-110 describing the tools and F-111 containing recommendations on the use of various available impact tools.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9242

Need VOLUME on SMALL PARTS like these?

Investigate MULTI-SWAGE

●If it's VOLUME you need on small tubular metal parts similar to these, be sure to look into Bead Chain's MULTI-SWAGE Process. Many prominent users of solid pins for electronic and mechanical purposes have cut costs by switching to Multi-Swaged *tubular* pins . . . without sacrificing strength or accuracy. Multi-Swage Parts serve in a wide variety of electronic and mechanical products. Send part (up to ¼" dia. and to 1½" length) and your specs for a quotation. Or write for DATA BULLETIN.

The BEAD CHAIN Mfg. Co.
TRADE MARK
59 Mountain Grove St., Bridgeport 5, Conn.
Manufacturers of BEAD CHAIN — the kinkless chain of a thousand uses, for fishing tackle, novelty, plumbing, electrical, jewelry and industrial products.

If you write maker identify as IEN - 9243

Splice . . . Tap . . . Terminate with "Lock-Tite" Connectors

T&B ENGINEERED

Once tightened, T & B Lock-Tite connectors stay tight . . . on solid rod, tubing, or all types of cable from #4 to 1000 MCM.

Simply installed with a key wrench, Lock-Tite fittings have a built-in lock-washer and serrated saddle and socket to assure high-conductivity connections . . . they can be used over and over.

LOCK-TITE LUG — All-around pressure prevents damage to cable strands. Seven sizes fit all cable sizes from #4 to 1000 MCM.

LOCK-TITE TEE-PARALLEL TAP — Use as a tee, parallel, elbow, two-way or reducing connector. Hinged top hooks to the "main"; lower opening holds the "branch".

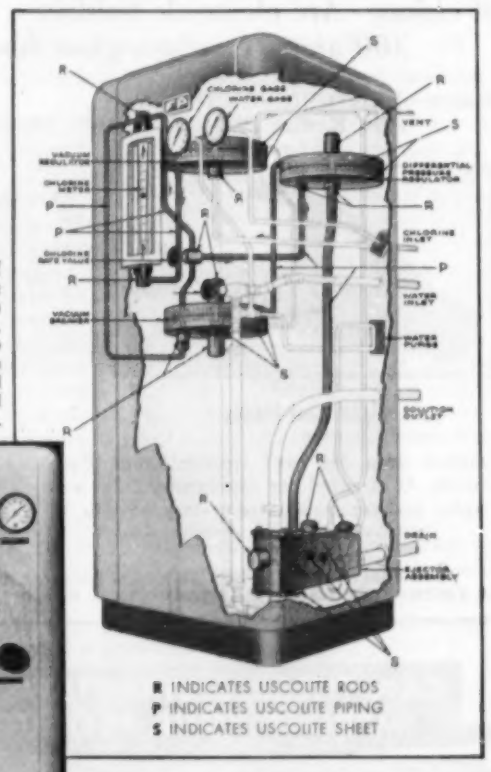
LOCK-TITE TWO-WAY CONNECTORS — Use as an end-to-end connector or reducer. Each cable separately held by individual serrated saddles.

For complete information on T & B Lock-Tite connectors send for a free folder. T320

THE THOMAS & BETTS CO.
INCORPORATED
60 Butler Street, Elizabeth 1, New Jersey
Thomas & Betts Ltd., Montreal, P.Q., Canada

If you write maker identify as IEN - 9244

Unusual resistance to chlorine makes Uscolite® a "must" for this chlorinator



(Right) View of U. S. Uscolite Fittings in chlorinator. They are also used on machined flanges and connectors.

To handle chlorine, especially moist chlorine, requires the finest corrosion-resistant material, since this gas is more difficult to handle than hydrochloric acid. The manufacturer of this chlorinator, Fischer & Porter of Hatboro, Penna., in its search for the right material, selected U. S. Uscolite, after more than a year of testing *in their own* laboratories and in the field.

Uscolite is a thermoplastic made by United States Rubber Company. It is highly resistant to most chemicals, is extremely light, with great impact strength. Month by month, more and more manufacturers are finding that it gives them advantages unobtainable in any other material. Uscolite is an example of how "U. S." research scientists can invariably come up with a solution to a "they-said-it-couldn't-be-done" problem. Call any of our 27 District Sales Offices, or write to address below.

"U. S." Research perfects it
"U. S." Production builds it
U. S. Industry depends on it

US RUBBER — UNITED STATES RUBBER COMPANY

Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.
Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Molded & Extruded Rubber & Plastic Products • Protective Linings & Coatings • Grinding Wheels • Packings • Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats & Matting

If you write maker identify as IEN - 9246

Surface-active agents in the solvent detergents hook their "oil-loving" ends to the oil in the dirt on a metal surface—then hook their "water-loving" ends to the rinse water. **Result:** Solvent, oil and solid dirt are swept away in the rinse.

FREE For 24-page booklet describing these splendid precleaners and paint strippers, write Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 9247

AN 659 TERMINALS

Prompt Delivery

Buy

Sherman terminal lugs to AN659 Specifications for No. 8 to 4/0 Cable sizes are now being manufactured for prompt delivery. Contracted from higher grade electrolytic copper, electro tinned, marked with wire size and "Sherman" Trade Mark. Write Dept. E.E. today for full information.

H. B. SHERMAN

MANUFACTURING CO.

BATTLE CREEK • MICHIGAN

If you write maker identify as IEN - 9248

Keep Dirt and Moisture Out of AIR TOOLS and STEAM USING EQUIPMENT

Write for your FREE COPY

ANDERSON Hi-eF PURIFIERS

- *Protect Air and Steam Equipment for Life*
- *No Messy Filters* • *Fully Automatic*

For your copy of Bulletin 501 write

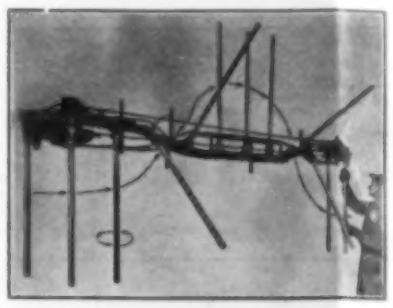
V. D. ANDERSON COMPANY

1966 West 96th Street • Cleveland 2, Ohio

If you write maker identify as IEN - 9249

Conveying - Overhead equipment for even distribution of dip finishes

Source: E. W. BUSCHMAN COMPANY
4447 Clifton Ave., Dept. IEN, Cincinnati 32, Ohio



Handling tubular work

DipAid trade names a new section for insertion in the company's Bush-Lock Cable conveyor, previously described IEN-3733-54. The section is designed for use where parts or products are dipped in liquids of various types. It consists of two spiral 180-deg. twists in the trolley rail plus accessory buffer strips and side rail guides.

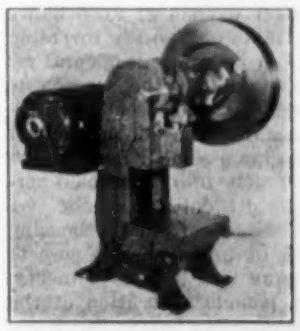
A product, emerging from the dip tank, is swung counterclockwise through a 180-deg. arc and then is returned to its normal position by the spiral twist in the rail. At the same time, a horizontally mounted wheel engages the side rail to rotate the part or product on its own axis. These combinations of motion minimize running, streaking, sagging or beading.

Application can be made on the company's ¼ or ⅜-in. conveyor. The section can be supplied in lengths and design to impart a variety of motions. Special hooks, with rigid connection to the product, are available also.

If you write maker identify as IEN - 9250

Press - Open back inclinable, rates 2 tons, ¾ in. standard stroke

Source: SALES SERVICE MACHINE TOOL CO.
2363 University Ave., Dept. IEN, St. Paul 14, Minn.



Ask for specifications

Model 00 is a new miniature unit in the company's line of mechanical presses. It is intended to take the place of kick presses and to eliminate manual punching and assembling operations. It can be applied in manufacture of small stampings and for secondary operations and assembly work.

The bolster measures 4¾ by 6 in. and is ¾ in. in thickness. Distance from the bolster to the slide, with the stroke down and adjustment up, is 3⅝ inches. Slide adjustment is ¾ inch. Distance from the back to the center of the slide is 2½ inches. Hole diameter for a tool shank in the slide is ¾ inch. The press takes a ⅓-hp. motor to operate at 1,725 rpm. With this motor, the flywheel speed is 270 rpm.

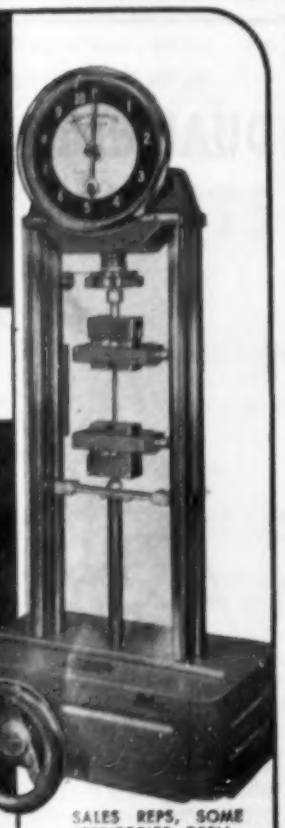
Control centers at a single trip mechanism that can be set for continuous operation. Construction includes gib adjustment on both sides of the slide, bronze bushings for the flywheel, crankshaft and connecting rod. A bronze lock is provided also for the setscrew on the connecting rod ball in the slide. A brake can be supplied to order although it is not required in the standard construction. The machine takes 7 by 9¾ in. of bench space. Shipping weight is 90 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9251

DILLON *Universal* TESTER

Motorized or Hand Operated



Engineering skill at its highest! COMPRESSION-TENSILE-TRANSVERSE and SHEAR testing combined in one portable instrument.

7 different gauges available—all interchangeable! Capacities from 250 up to 10,000 lbs. Dillon Universal Tester handles rounds, flats or special shapes and—for split accuracy—is calibrated with Proving Ring certified by U. S. Bureau of Standards. Has maximum hand, self-aligning grips, ball bearings. America's most popular low-priced tester! Write for illustrated brochure and FREE Tensile Strength Computer.

W. C. DILLON & CO., INC.
14620K KESWICK STREET
VAN NUYS (Suburb of Los Angeles)
CALIFORNIA

SALES REPS, SOME TERRITORIES OPEN—WRITE

WRITE FOR LITERATURE AND FREE TENSILE STRENGTH COMPUTER.

If you write maker identify as IEN - 9252

AIM for preset tension on your steel strapping

Acme Steel offers the only complete line of PNEUMATIC STRETCHERS

These new time-saving Acme Steel Strapping Tools can be set in advance for uniform, consistent tension. There's no guesswork. The Pneumatic Stretchers do the work—reducing employee fatigue. There are Acme Steel Pneumatic Stretchers for tensioning strapping on all sizes and shapes of containers, packages and bundles . . . and a model to suit your needs. For details, write Acme Steel Products Division, Dept. KL-84, Acme Steel Company, 2840 Archer Avenue, Chicago 4, Illinois.

AIM *for Safe, Lower-Cost Shipping* ACME STEEL

If you write maker identify as IEN - 9253

FOR MATERIAL HANDLING—
more and more—the swing is to wide-base pneumatic tires

GENERAL

INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME • MONEY • LABOR

- *MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS*
- *CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE*
- *SAVE HIGH COST FLOORS AND FLOOR SURFACES*
- *SLOW, EVEN WEAR FOR LONG SERVICE*
- *HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND*
- *ROLLS EASIER, SMOOTHER OVER ALL SURFACES*

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as IEN - 9255

Air Operated ROTARY WORK FEEDER

Deftly holds and delivers small parts to drill, tap, swage, stake, etc. Stations accurate to .002". Guaranteed against over-travel or "skipping." Indexes as slow or fast as you like, up to 10,000 per hour. Compact and sturdy, easy to tool and hook up.

Standard dial plate 10"; available in 12". For a new job, simply tool up a new dial. Readily combines with "MEADMATIC" Timer, Air Hammer, Air Press, Drill Presses, etc. — to make almost completely automatic machines — operator merely loads.

FREE! NEW MEAD INDUSTRIAL AIR POWER CATALOG READY
SEND FOR YOUR COPY TODAY!

MEAD SPECIALTIES COMPANY
4114 No. Knox Ave., Dept. E-84-A, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 9256

SPECIAL SHAPES
Precision Cut on the Job From Standard Refractory Stocks

Every shape and size refractory **cut in seconds.** Perfect fitting reline jobs that last longer—cost less. And Clipper's Patented Features give you DUSTLESS cutting, instant Portability and complete Flexibility.

Nearly 20 Years Experience Behind GENUINE CLIPPER PRODUCTS

The unqualified Clipper guarantee of satisfaction is backed by world-wide experience, the ability to select the finest materials and the "know-how" to put them together.

DON'T GAMBLE!
You are GUARANTEED ECONOMY with CLIPPER SUPERIOR BLADES!

. . . all specifications of Abrasive, Diamond and "CBR" (Break-Resistant) Blades guaranteed to "Consistently Provide the fastest cut . . . at the lowest cost . . . with the greatest ease!"

FREE TRIAL!

Discover how Clipper will increase profits by increasing production at reduced costs. "ON THE JOB" FREE TRIAL guarantees satisfaction at NO OBLIGATION.

PATENTED CLIPPER FEATURES

PRESSURE EQUALIZER
Automatically Cushions Blade for Longer Life.

SELECT-A-NOTCH
Instant Adjustment for Any Size Material.

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH —SEE BELOW

Mr. Clipper

SAVE BY SAWING REPAIR PATCHES and TRENCHES
IN FLOORS—RUNWAYS —STREETS with a CLIPPER "CONSAW"
5 MODELS—GAS OR ELECTRIC POWERED

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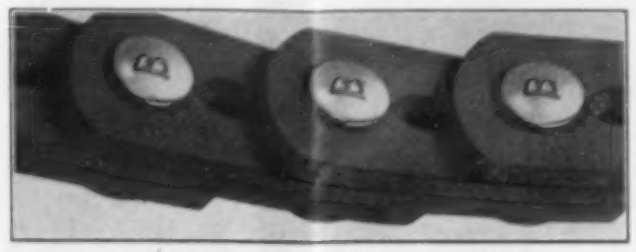
TEAR OUT AND MAIL!

CLIPPER MANUFACTURING CO.
11 E. 28th STREET, KANSAS CITY, MO.
Send FREE Literature and Prices on:
☐ CLIPPER MASONRY SAWS ☐ DUSTLESS MODELS ☐ DRY ONLY MODELS
☐ CLIPPER CONSAWS
☐ CLIPPER ABRASIVE BLADES ☐ WET ☐ DRY
☐ CLIPPER DIAMOND BLADES
98 IND.
COMPANY
ADDRESS
CITY STATE

If you write maker identify as IEN - 9258

Drive - Link type V-belt assembles from stock as required

Source: BRAMMER CORPORATION
684 Broadway, Dept. IEN, New York 12, N. Y.



Detail information upon request

Resistance to stretch characterizes the new Brammer "Red" link type belt. The links are made of a new rubber compound and special fabric weave. The line now includes the new regular belt links identified by their red color, an oil resistant link that is colored green and a static conductive link colored black. Link sizes, from O to C, are identified by the letters on the rivet heads. Links can be added or taken out by hand without need for tools.

If you write maker identify as IEN - 9259

Wrench - Electric impact tool for threaded fastenings to ⅝ inch

Source: CHICAGO PNEUMATIC TOOL CO.
6 E. 44th St., Dept. IEN, New York 17, N. Y.

Reversible control

Impact action is delivered to the ½-in. square driving nose of this new Model CP-903-R impact wrench at 2,000 blows per minute. A safety reversing switch prevents accidental reversing while the wrench is operating. The assembly is balanced over the side handle and presents a slender nose section to reach into locations normally difficult for access.

Clearance from the housing to the center of the spindle is $1\frac{3}{16}$ in. and from the nose to the center is 1 inch. Overall housing length is 10⅝ inches. Weight of the tools itself is 7¾ pounds. Operation of the universal motor is on 110-volt input but it can be supplied, when specified, for 220 volts. The company is prepared to supply an assortment of ½-in. square drive accessories, insert bits and bits with finder sleeve adaptors.

If you write maker identify as IEN - 9260

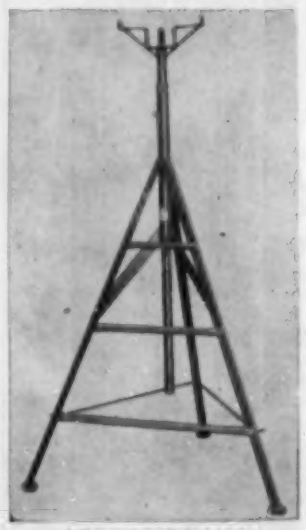
Positive protection is provided against unauthorized entry by a new tamper proof sealing material known as EC-1252. It is a fast drying material for application over adjustable or removable parts to indicate changes of adjustment or other evidence of tampering by a break in the seal when the part is altered in position. The material adheres to aluminum and steel. The dry material can be heated a little above 200 deg. F. for short periods without sagging or loss of adhesion. The maker is Minnesota Mining & Mfg. Co., 423 Piquette Ave., Dept. IEN, Detroit 2, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9261

Paid News Advertisement by Waco Mfg. Co.

DUAL HEAD Scaffold Jack . . .



Waco Model 66 D

Sets up faster, stores easier

UNIQUE HEAD DESIGN permits Waco Scaffold Jack to accommodate either planks or stringers. All steel, safety-welded jacks are available in four convenient sizes for reaching walls and ceilings up to 17'6" in height. All models are light weight, free standing and adjustable in height. Base folds for easy storage.

Waco Scaffold Jacks are used by painters, plasterers, electricians, maintenance men for straddling obstacles such as machines, desks, office equipment. Ideally suited for all plant maintenance applications. Waco Scaffold Jacks save hours of time in reaching off-the-floor work, give workmen a safe, steady platform at all times.

Write **Waco Mfg. Co.,** 3567 Wooddale Ave., Mpls. 16, Minn. for new illustrated brochure SJ-1 containing job pictures and specifications for all models. **WACO MANUFACTURING COMPANY,** 3567 Wooddale Ave., Minneapolis 16, Minn.

If you write maker identify as IEN - 9262

SHELDON

CHICAGO U.S.A.

More will be *profit* with a SHELDON

It actually costs less to do turning jobs on a Sheldon Precision Lathe. Machine-tool investment is cut to a fraction. Power cost is materially reduced. Less experienced operators can operate Sheldons safely and efficiently. Even cost-loadings for plant-floor space, heat and light are lower because two Sheldons can often operate in the space occupied by one large lathe.

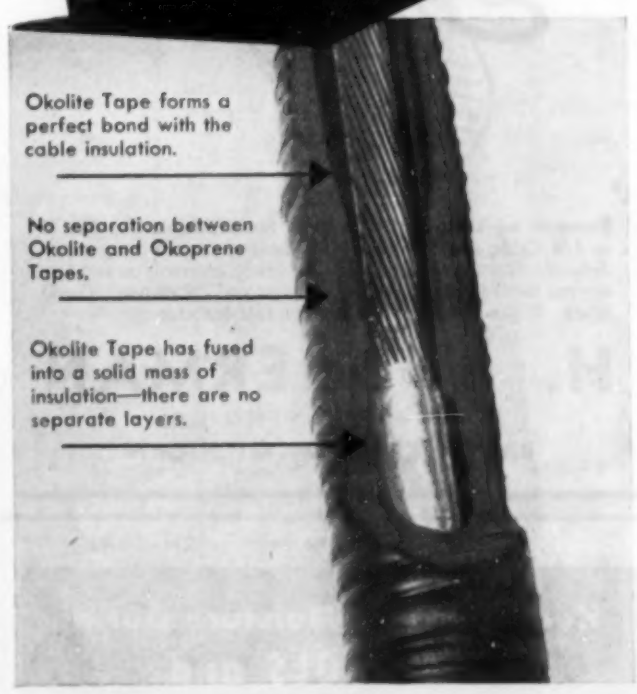
On most "everyday" jobs a Sheldon will actually turn out more pieces per hour too. With double V-belts to the spindle Sheldon lathes deliver enough power to take heavy cuts in direct drive, at high speeds. Sheldon's "Zero Precision" Taper Roller Bearings permit work to the closet tolerances. Seldom are such extremely accurate bearings used in moderate priced lathes.

You will actually keep more as profit if you use Sheldon Lathes. Write for Catalog.

SHELDON MACHINE CO., Inc. 4208 North Knox Ave., Chicago 41, Ill.

If you write maker identify as IEN - 9263

Perfect bond, no voids, no separate layers with OKONITE RUBBER SPLICING TAPES



Unretouched photo of cutaway splice.

On this 5-kv unshielded cable you can see the elements that make up a long-lasting splice—one that is "Spliced for Life." Okolite High Voltage Tape, applied over the conductor, has fused into a solid, uniform layer of insulation. Ozone-resistant and moisture-resistant, Okolite Tape has a high dielectric strength, high insulation resistance and excellent aging properties.

The Okoprene Tape, replacing the sheath, supplies the same tough weather, oil, acid, and heat resistance given by the neoprene sheath. Write for a set of instruction sheets IE-5678 for information on better splicing techniques. The Okonite Company, Passaic, N. J.

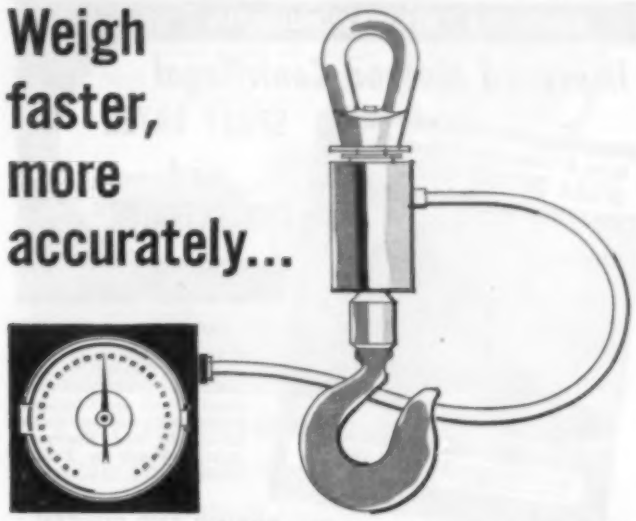
Available through authorized distributors only.

Made by
THE OKONITE COMPANY
PASSAIC OKONITE SINCE 1878 NEW JERSEY

2565

If you write maker identify as IEN - 9265

Weigh faster, more accurately...



with a Baldwin SR-4® crane scale

A simple unit, this new electrical weighing device consists of the SR-4 pick-up, the instrument, and cable reel if required. The portable crane scale is simply hung on your crane hook.

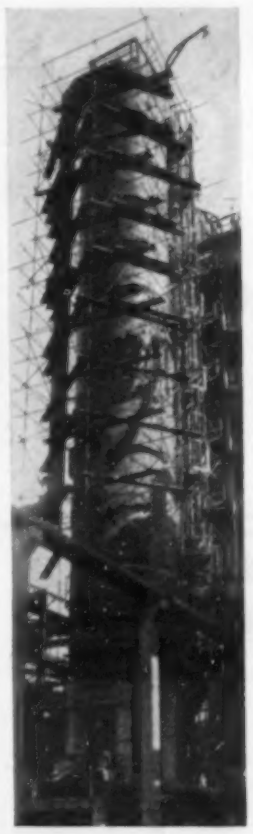
The electrical signal can be transmitted to indicators, recorders, or printers located either in the crane cab or at any other convenient spot in the plant.

For further information write for our new bulletin on crane scales. Address Dept. 3113, Baldwin-Lima-Hamilton Corporation, Philadelphia 42, Pennsylvania.

BALDWIN-LIMA-HAMILTON

Philadelphia 42, Pa. • Offices in Principal Cities
In Canada: Peacock Bros., Ltd., Montreal, Quebec

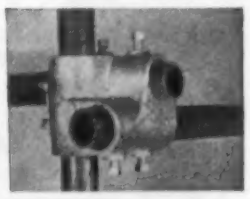
If you write maker identify as IEN - 9266



Now

you can build your scaffold not only UP
but
OUT and OVER
for safe and easy access to meet all conditions with **AMIDON FITTINGS** and new or used one inch pipe.

Write for additional information



AMIDON ENGINEERING CO.
ELYRIA 14, OHIO

If you write maker identify as IEN - 9267

BLUE DEVIL SOCKET SCREW PRODUCTS

When you buy or specify Blue Devil, you're sure of better manufacture, better performance, maximum all-round satisfaction. Whatever your socket screw needs, help yourself to quality . . . Blue Devil Socket Screws!

SET SCREWS
PIPE PLUGS

Actual cross-section diagram shows how cold forming of Blue Devil Socket head insures unimpaired fiber continuity.

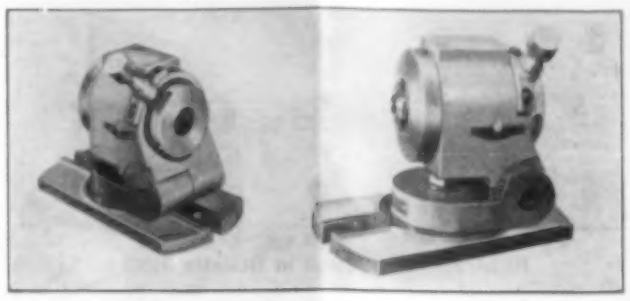
SOCKET SCREWS EXCLUSIVELY!

SAFETY SOCKET SCREW COMPANY
6508 Avondale Avenue, Chicago 31, Illinois
SOLD ONLY THROUGH AUTHORIZED INDUSTRIAL DISTRIBUTORS

If you write maker identify as IEN - 9268

Indexing - Dividing collet head positions work universally on a machine

Source: KUMA TOOL CO.
8751 S. State St., Dept. IEN, Chicago 19, Ill.



For toolroom and production use

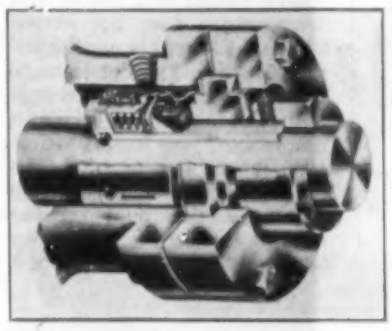
A work piece can be positioned at any angle between vertical and horizontal, through any horizontal angle on the vertical axis, and can be rotated on its own axis for various angular positions with this new Model C-404 universal head. It takes a standard Type-5C collet for work to the equivalent of 1 in. in diameter. Height to the collet center line, in horizontal position, is 4½ inches. Height to the top ground flat is 6¾ in. and overall height is 8 inches. The base measures 5 by 9½ inches. Interchangeable index plates are available with 2 to 36 spacings.

The head weighs 25½ pounds. It is ground all over to 0.0005 in. for accuracy. The collet spindle is hardened and ground and rides on Timken roller bearings with oil seals for dust protection. Attachments are available to apply the head as an angle dresser, as a radius dresser and to take a 3 or 4-jaw chuck in place of the collet.

If you write maker identify as IEN - 9269

Sealing - Self-contained unit prevents axial leakage along a shaft

Source: CRANE PACKING CO.
1800 Cuyler Ave., Dept. IEN, Chicago 13, Ill.



Available to order

Type 9 designates a new special design of the "John Crane" shaft seal for the rotating shaft of a cargo pump. The seal is mounted on a sleeve with an outside clamping ring to permit quick installation or removal from the pump housing without taking off the upper portion of the pump housing. The mounting sleeve is held to the shaft and to the clamping ring by set screws. It is sealed on the shaft with an O-ring.

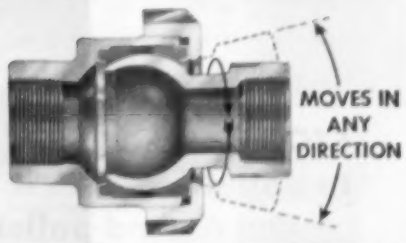
The company's non-metallic seal ring prevents leakage past the seal assembly as it bears on the mating metallic seal ring that is clamped with its flat packing ring against the housing end. A spring, back of the rotating ring, maintains sealing contact. The company is prepared to supply the assembly in specified dimensions for non-corrosive or corrosive liquids to 500 deg. F. The seal ring is made of teflon. Springs and metal parts are supplied to meet specified requirements.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9270

BARCO *Flexible* **BALL JOINTS**

—when you need movable joints in piping handling



STEAM, OIL, CHEMICALS

Send for New Bulletin No. 215

- Provides for movement in piping—up to 40° side flexibility, plus 360° rotating movement.
- Stainless steel and chemically inert gaskets for strong chemicals. No metal-to-metal contact. Choice of body materials.
- One Barco Ball Joint does the work of two or more ordinary swivel joints because "it moves in any direction!"
- Many models available. For pressures to 7,500 psi; temperatures to 1000° F. 15 different sizes. ¼" to 12". *Ask for recommendations.* BARCO MFG. CO., 538J Hough St., Barrington, Illinois.

THE ONLY TRULY COMPLETE LINE OF FLEXIBLE BALL, SWIVEL, SWING AND REVOLVING JOINTS

If you write maker identify as IEN - 9271

Coffing adds New CABLE *Quik-Lift*

to its broad line of portable hoists

Like the well-known Coffing coil chain Quik-Lift, this fast, flexible cable electric hoist has all the rugged construction and operating features necessary for tough production-line work.

CONVENIENT TO USE — Requires little head room. Swivel hook avoids twisting cable. Has handy push-button control.

DUAL BRAKES — Weston-type *load brake* avoids overheating. Shoe-type *motor brake* with large surface area assures instant stops without drift.

BUILT FOR HARD SERVICE — Gears are heat-treated, sealed and running in oil. Motor is completely enclosed, all metal parts are treated to resist corrosion.

RIGHT MODEL TO FIT YOUR NEEDS — Available with lug, hook, or trolley suspension. Six models, capacities from 500 to 4,000 lb.

Ask your Coffing distributor to show you the New Cable Quik-Lift or write for complete details. Just ask for Bulletin PSCQ.

SOLD BY DISTRIBUTORS EVERYWHERE

COFFING HOIST COMPANY
DANVILLE, ILLINOIS

Hoist-Alls • Safety-Pull Ratchet Lever Hoists
Mighty Midget Pullers
Spur-Gear Hoists
Differential Chain Hoists
Load Binders
I-Beam Trolleys

If you write maker identify as IEN - 9272

What's YOUR Heating or Air Conditioning Control Problem?

. . . with their 60 years of experience installing pneumatic systems of temperature and humidity control in all types of important buildings are well qualified to help you obtain the greatest return from an investment in — **ACCURATE UNIFORM CONTROL** in all types of heated or air conditioned spaces—offices, factories, process rooms, processes, research and test laboratories, packaging or storage rooms. You can gain . . .

Some Prominent Users of Powers Control:
Ford Motor Co.
Chrysler Corp.
Esso Research Center
Sears Roebuck & Co.
Bendix Aviation Corp.
Goodrich Tire & Rubber Co.
Eastman Kodak Co.
Pepperell Mfg. Co.
Armour & Co. • Swift & Co.
Bachmann Uxbridge Corp.
Monsanto Chemical Co.
U. S. Capitol Bldg.
M.I.T. and Harvard Univ.
N. Y. Stock Exchange

Increased Efficiency and Output of Workers by keeping each room or department at its proper temperature.

Cuts Heating Costs up to 25%—23% fuel savings reported by E. R. Squibb & Sons. With today's higher fuel costs bigger savings than ever before are possible with Powers control. It eliminates fuel wasted by OVER-heating with manual operation.

Precision Control for Processes—Wherever product uniformity and quality are dependent upon precise temperature and humidity regulation use Powers controlling, indicating or recording instruments.

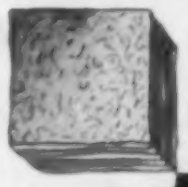
Phone or Write Powers Nearest Office for aid in selecting the type of automatic control that will give best results for your requirements. There's no obligation. Powers control systems can be installed in existing as well as new buildings.

(a90)

THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in Over 50 Cities, see your phone book.
OVER 60 YEARS OF TEMPERATURE AND HUMIDITY CONTROL

If you write maker identify as IEN - 9274

to designers and engineers:



SEND FOR A SAMPLE SET OF **TUFFLEX FABRICS**

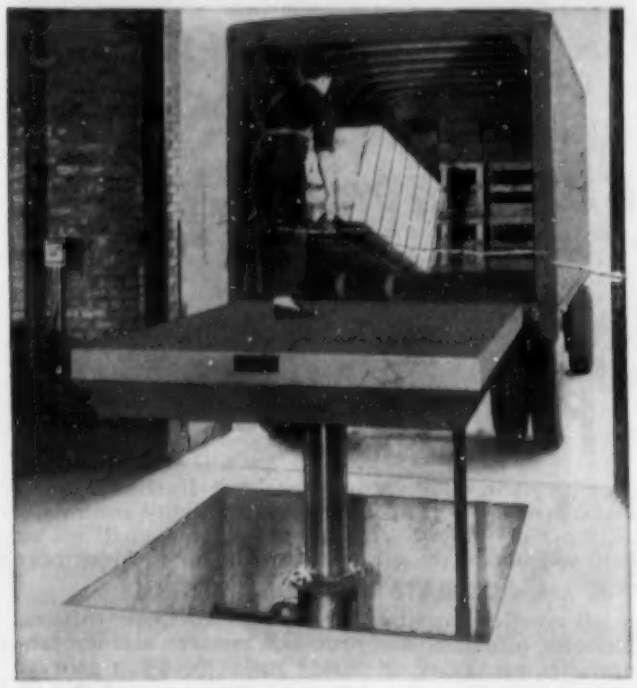
You've never seen anything like these versatile, new non-woven fabrics! They're made from various fiber combinations—and they have a thousand uses: protective padding—cushioning—linings—fillers are only a few. You can choose from types which are soft, firm, springy, resistant to compression, non-abrasive, non-corrosive, or high in wet and dry strength. See for yourself how Tufflex fabrics can serve YOU better. Send now for free samples—no obligation. Wood Conversion Company, Dept. 126-84, First National Bank Building, St. Paul 1, Minnesota.

KEEP YOUR EYES ON **TUFFLEX® FABRICS**

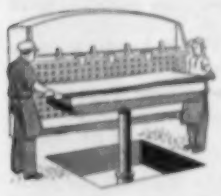
*Reg. U. S. Pat. Off.

If you write maker identify as IEN - 9275

Rotary LEVELATOR® Lifts HANDLE HEAVY LOADS FASTER AND CHEAPER



Adaptable To Many Uses—Use economical Oildraulic power to lift loads from plant floor to trucks, machines or different building levels. Rotary Levelator Lifts speed plant traffic, cut labor costs. Save plant space too . . . often eliminating need for loading docks.



Machine Feeding—Used for machine feeding, Levelator Lifts are time-savers, cost-savers. They lift loads faster and cheaper than men or makeshift methods and keep materials at the right height for continuous feeding.

Levelator Lifts are built for specified loads up to 80,000 lbs., travel up to 6 ft., speed as desired. When lowered, platform recesses into floor and can be trucked over. Powered by economical compressed air or hydraulic power unit.

MAIL COUPON FOR CATALOG

ROTARY LIFT CO.,
1152 Kentucky, Memphis 2, Tenn.
Send complete information on Levelator Lifts to:

Name.....

Address.....

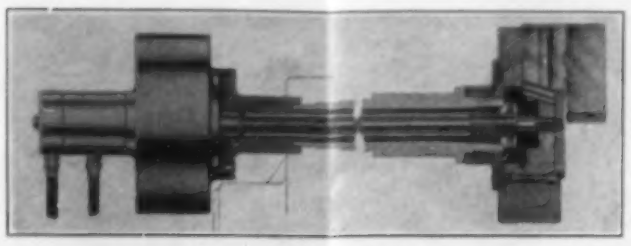
.....

Rotary **LEVELATOR® LIFTS**

If you write maker identify as IEN - 9277

Chuck - Pneumatic assembly designed to apply on small lathes

Source: SKINNER CHUCK CO.
Edgewood Ave., Dept. IEN, New Britain, Conn.



Illustrated and priced in Bulletin JP67

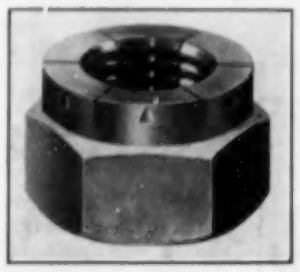
Work can be chucked with repetitive accuracy, internally or externally, following application of this new Junior assembly of pneumatic chuck and operating head on a lathe. It applies on most standard designs of small lathe having a 1 to 1⅝-in. hole through the spindle. It is light in weight and balanced to minimize spindle bearing and braking loads.

The self-centering 8-in. chuck has gripping capacity from ¼ to 6 inches. Its ¼-in. jaw movement is particularly suited for second operation production work where rough or finished holding diameters vary by a considerable amount. The complete assembly includes the 8-in. three-jaw wedge type self-centering chuck and a 6-in. high speed rotating aluminum air cylinder with an aluminum cylinder adaptor plate, mounting tube, tube lock nut and drawbar.

If you write maker identify as IEN - 9278

Fastening - Aluminum nut, locking design, features light weight

Source: STANDARD PRESSED STEEL CO.
Box 732, Dept. IEN, Jenkintown, Pa.



6-32 to 5/16-24

Application is on steel bolts or studs in place of steel nuts where weight is a factor and temperature does not exceed 250 deg. F. for this new aluminum locknut. The nut is made of 24ST aluminum. It is chemically treated against corrosion and is dyed blue for identification. Spring tension of the resilient segments of the top locking section hold the nut against turning on the bolt or stud threads whether the nut is seated or not. It can be reused without loss in locking ability.

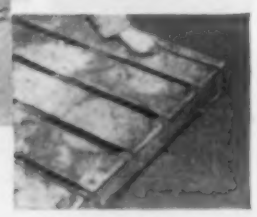
If you write maker identify as IEN - 9279

New applications have been developed for plant use of the Modernfold accordion-type folding door. It can be installed as a movable wall between working areas and shipping rooms to keep cold air out of the working area when doors must be opened to the outside. It will divide off two or more areas or can be retracted to bring several areas into one. Its corrosion resistant steel frame can be covered with flexible material suited for given duty. New Castle Products Inc., Dept. IEN, New Castle, Ind., can supply the door for any requirement.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9280

Loose nails rip containers.



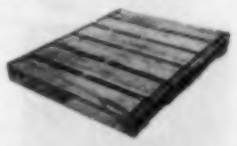
Split boards weaken pallets.

STOP DAMAGE to pallet loads and extend pallet life!

Signode Steel Strapping tensioned and stapled over the end boards on a pallet extends pallet life as much as three times. The strapping holds the end boards tightly to the runners, keeps pallets rigid, prevents nails from working loose, and reduces chances for damage to end boards by fork lift trucks.

Damage to bags and cartons strapped on pallets is virtually eliminated. Savings are so certain that *some large shippers strap all new pallets!* Write for factual data and free demonstration.

Pallet reinforced with Signode steel strapping.



SIGNODE
STEEL STRAPPING COMPANY
2611 N. Western Ave., Chicago 47, Ill.

SIGNODE THIS SEAL MEANS SECURITY IN SHIPPING

If you write maker identify as IEN - 9281

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique Centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

Write for New FREE Bulletin 265R

DRYING and CONCENTRATING CO.
233 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

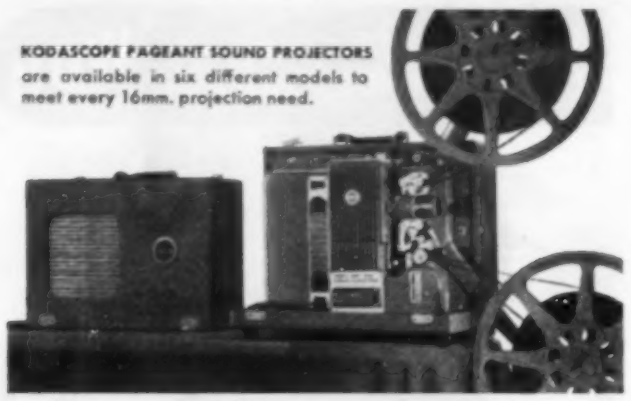
If you write maker identify as IEN - 9282

THE TORRINGTON COMPANY
Specialties Division
900 Field Street, Torrington, Conn.

TORRINGTON SPECIAL METAL PARTS

Makers of Torrington Needle Bearings

If you write maker identify as IEN - 9284



Put movies to work

with this trouble-free projector

Movies make almost every type of training or technical information easy to understand . . . easy to use . . . and easy to remember.

You know your movie shows will be successful when you use a Kodascope Pageant 16mm. Sound Projector. Faulty lubrication, the most common cause of projector breakdowns, is eliminated by the Pageant's permanent pre-lubrication. Only the Pageant has this important feature.

Simple, guided threading makes the Pageant unusually easy to operate. Completely portable, projector and speaker fit into a single, handy, lightweight case.

WRITE FOR FREE BOOKLET—"The Kodascope Pageant Sound Projector."

EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak

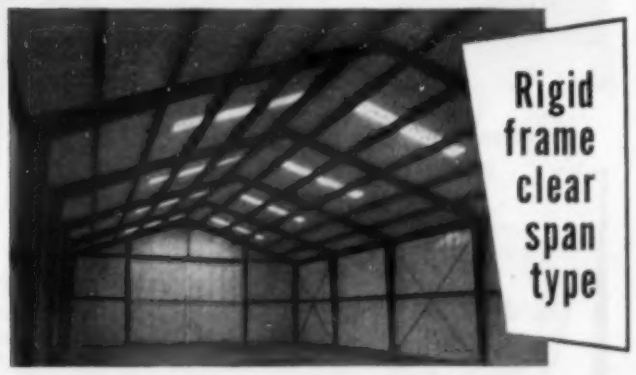
If you write maker identify as IEN - 9285

Need Light Manufacturing or Utility Buildings?

Any Type Building you need erected with USF prefabricated standard building units!

The complete line of USF prefabricated all-steel buildings offer you a variety of standard building units that can be combined to form any type light or medium service building you need. Standard USF 26′ and 30′ wide buildings offer 10′ and 12′ heights in 13′-6″ lengths . . . singly or as multiple buildings.

For heavier service, investigate the USF 40′ wide clear span, rigid frame building with 14′ height and 20′ lengths . . . single or multiple.



This building offers truck or access doors, sides or ends and projected sash on two levels in any location. Other buildings have wide variety of side wall treatments to suit all uses.

All sheet attachment is with exclusive clip-and-wedge method . . . no screws, rivets or welding. Insulation always available. Get the full facts and plan your own building with USF all-steel prefabricated building units!

UNITED STEEL FABRICATORS, INC.

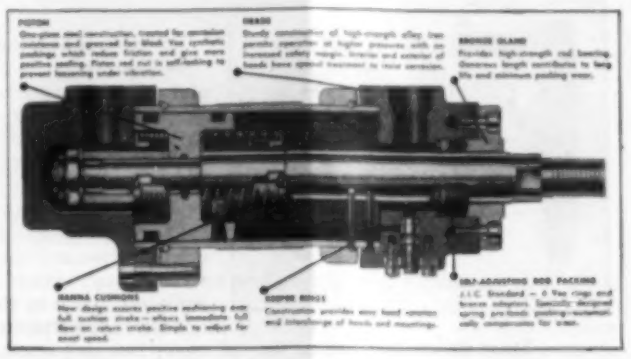
Building Sales Dept.
WOOSTER, OHIO

MANUFACTURERS OF Hollow Metal Doors and Frames • Prefabricated Metal Buildings • Corrugated Metal Window Wells • Highway Guard Rail • Structural Bridge Flooring • Corrugated Metal Pipe

If you write maker identify as IEN - 9287

Cylinder - For air or oil to 750 lb., 1½ to 3 in. sizes

Source: HANNA ENGINEERING WORKS
1748 Elston Ave., Dept. IEN, Chicago 22, Ill.



Catalog 750

Steel piston rod, ground, polished and chromium plated, rides in a bronze gland in this new Series 750 **Fluid Power** cylinder. The rod is sealed against leakage by **a spring backed** packing made of a bronze adapter and four **chevron rings.** The rod carries a one piece steel piston fitted with **block type** Vee synthetic packings. The connection between the rod and piston is sealed with an O-ring and the piston is held in place by a sleeve and nut.

Both faces of the piston are equipped with spring loaded cushion valves that extend 1 in. from the piston faces when they are not compressed. They close the exhaust port to trap fluid between the piston and the head so it must bleed out through an adjustable needle valve. It can be set externally to adjust cushioning action. Thus full piston area is immediately available for pressure application on the return stroke.

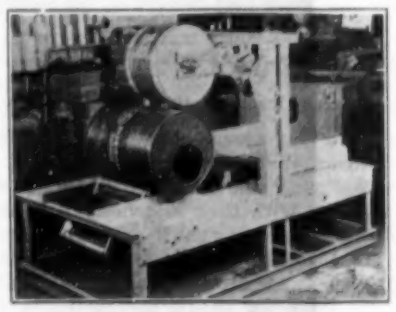
The piston operates in a cold drawn brass cylinder to which cast iron heads are secured by keeper rings, collars and screws. O-rings seal the heads to the cylinder. The assembly permits rotating the heads to suit a given installation.

The company is prepared to supply the assembled cylinder for hinge, foot, rod flange, blind flange, trunnion flange, foot rod flange, foot blind flange, foot hinge, foot flange hinge and hinge mounting. Stroke is subject to specification.

If you write maker identify as IEN - 9288

Marking - Roll type machine prints legend on 150 and 250 lb. drums

Source: INDUSTRIAL MARKING EQUIPMENT CORP.
454 Baltic St., Dept. IEN, Brooklyn 17, N. Y.



Built to order

Straight rollers form cradles on a chain conveyor beneath the circular printing head of this new machine. An operator loads drums onto the cradles to be carried beneath the continuously revolving head. The drum rotates with the head to be printed and then is ejected. Different diameters of drum are adjusted for by raising and lowering the head on its support.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 9289

A RADIANT HEAT SOURCE, *Easily Installed*

"FOLDED-and-FORMED" Heating Elements

are quickly, easily installed in furnaces, ovens, kettles, etc., to assure a heat source unequalled for quick rise to temperature; long-life efficiency; low-cost maintenance and repairs.

STANDARD RACKS

Size 12″ x 12″. Installed vertically or horizontally, side-by-side, end-to-end, or in banks, to meet K. W. requirements. Five-year guarantee, at temperatures to 750°F. or 1350°F.

CUSTOMBUILT RACKS

Available in wide range of sizes and combinations, to fit any flat or curved area, to provide maximum K. W. at temperatures to 1850° F.

Hundreds of different applications are demonstrating the outstanding efficiency and economy of "F-and-F" Heating Elements. You, too, can use them *profitably!*

TREN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE PHILA 27, PA.

If you write maker identify as IEN - 9290

UNIVERSAL DRILL BUSHINGS OUTLAST THEM ALL!

Machined from high quality steel. Superfinish bores reduce wear. Blended radius helps prevent tool hang-up and breakage. 100% concentricity and hardness tests insure accuracy and uniform quality. Available in a complete range of standard sizes and lengths. Orders for special dimensions promptly handled. Write for complete information.

180-A

UNIVERSAL ENGINEERING CO.
FRANKENMUTH 6, MICHIGAN

If you write maker identify as IEN - 9291

Goodyear Industrial Tires are JOB-FITTED* for every need!

Goodyear's easy-rolling XTRA CUSHION solid tires in the All-Service tread (above) are made with a completely new compound that gives far greater cushioning and low rolling resistance.

*BY SIZE

(the right size for your equipment)

Over 100 different solid tire types and sizes plus a full line of pneumatic and semi-pneumatic tires — *America's most complete line of industrials!*

*BY TREAD

(the right tread for your floor surfaces)

Smooth and Grooved for easy rolling. All-Service or the famous All-Weather, wherever traction is needed.

*BY COMPOUND

(the right compound for best tire life in your operation)

Your choice of either UNiversal chip-resistant or Neoprene oil- and acid-resistant compound *at no extra cost!*

For a free job-fitted tire appraisal in your plant and suggestions on how you can cut tire costs, call your local Goodyear Dealer or write: Goodyear, Industrial Tire Sales, Akron 16, Ohio.

All-Service Tread Xtra Cushion

Smooth-Solid

All-Weather Tread

Rib All-Weather Pneumatic

Semi-Pneumatic Cushion

USE THE RIGHT TIRE FOR THE RIGHT JOB—USE

GOODYEAR
INDUSTRIAL TIRES

Xtra Cushion, All-Weather, All-Service—
T.M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

If you write maker identify as IEN - 9293

Four separate mixing actions in the Sturtevant Blender assure complete blending of various materials regardless of weights, densities, finenesses, or other physical properties.

This mixing action provides a thoroughly blended product with no substances floating to remain unmixed.

Sturtevant Blenders are available in mixing capacities from 500 to 20,000 pounds. Write for information or engineering assistance.

STURTEVANT MILL COMPANY
113 CLAYTON STREET, BOSTON 22, MASSACHUSETTS
Designers and Manufacturers of
CRUSHERS • GRINDERS • SEPARATORS • CONVEYORS • MECHANICAL DENS and EXCAVATORS • ELEVATORS • MIXERS

If you write maker identify as IEN - 9294

TO VIBRATION AND NOISE CONTROL

This completely new and practical guide to vibration shock and noise control provides helpful performance tables on standard units and typical case histories of special jobs that have been solved by General's custom designed and produced mountings.

It also features bushings for correction of misalignment and bearings designed to take torque action and oscillation.

For immediate help on your vibration problem, give us the facts on your company letterhead, or request a call from our field specialist on the attached coupon.

THE GENERAL TIRE
"From Plans to Products in Plastics and Rubber"
Industrial Products Division
WABASH, INDIANA

The General Tire & Rubber Company
Industrial Products Division
Wabash, Indiana

☐ Send your free design guide on General Silentbloc
☐ Have your representative contact us

Company_____ Name_____
Street_____ City_____ State_____
IEN-8-54

If you write maker identify as IEN - 9295

Cleaning - Spray washing machine for use on ball and roller bearings

Source: MAGNUS CHEMICAL CO.
Dept. IEN, Garwood, N. J.

Door closes work area

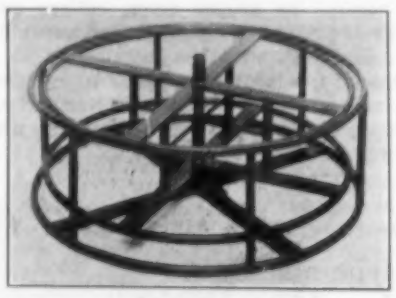
Individual bearings that require washing and rinsing are placed upon the four oscillating spindles in this new Model-RT spray washing machine. The spindles rotate through 360 deg. in one direction and then reverse to make a complete circle in the opposite direction to carry the race around and back again in recurring cycles. At the same time, the outer race is prevented from turning by spring loading devices at each spindle.

Washing and rinsing solution is directed through spray nozzles pointing at the work from above and below. A motor driven pump circulates the solution. Filtering equipment keeps it clean as it moves from the work back to the solution tank in the base. The machine will clean 500 bearings per day.

If you write maker identify as IEN - 9296

Handling - Steel payout reel for wire normally difficult to handle

Source: NEAL COMPANY
2806 Leavenworth St., Dept. IEN, Omaha 5, Nebr.



Sizes to order

Number 700 designates a new squirrel cage payout reel for wire such as triplex, aluminum service, galvanized strand, messenger cable. The reel can be mounted vertically in or on a truck or employed horizontally. It is light in weight and strong in any position. The steel parts are welded together. The reel can be supplied with stationary or adjustable pins for various inside coil diameters. The outer cage housing remains stationary while the inner reel rotates on the central support.

If you write maker identify as IEN - 9297

Seal-Guard trade names a new assembly of a pair of cone shaped bronze rings notched on the small diameter and a resilient outer compression ring that fits over the pair of cones which operate together with their notches staggered. The assembly applies on a reciprocating shaft to remove sand, grit, paint, chips, rust, scale before these materials can reach the shaft seals to cut them and cause leakage and shaft scoring. The guard is available for shafts measuring ½ to 10 in. in diameter from Hydraulic Accessories Co., 24301 Hoover Road, Dept. IEN, Van Dyke, Mich. The company has prepared a literature sheet which it will send on request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9298

THIS 1/4" TUBING FUELS CATERPILLAR DIESEL ENGINES AT PRESSURES UP TO 1,700 PSI

On Caterpillar Tractor Co.'s new 150 D.B. hp "Boss of the Crawlers," diesel fuel is injected to cylinders at pressures up to 1,700 psi. So fuel injection tubing must be clean, have tremendous burst strength and resistance to fatigue. C-1008 Low Carbon Steel Tubing, made by Superior, easily meets Caterpillar's stringent specifications. Specially conditioned, drawn to order and tested to the utmost, it has a Rockwell hardness of B-65 maximum—can be upset and formed into loops and bends without excessive springback. Bore is uniform, clean and free of cracks or seams that might cause failure. This tubing—or one of our 55 other analyses—may solve *your* problem. Send for free Carbon Steel Catalog Section 30, and tell us about your tubing troubles.

All analyses .010" to ⅝" O.D.
Certain analyses in light walls up to 2½" O.D.

SUPERIOR TUBE COMPANY
2016 Germantown Ave., Norristown, Pa.

Superior Tube
THE BIG NAME IN SMALL TUBING

If you write maker identify as IEN - 9299

ADD TO YOUR KNOWLEDGE
. . . of Stress Rupture

New B&W Technical Data Card gives lots of stress rupture data on B&W Croloys (as well as medium carbon steel). Analysis, Heat Treatment, Test Temperatures and hours under stress.

It's all included in TDC-153A—That's what you send for.

TA-4070(LP)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

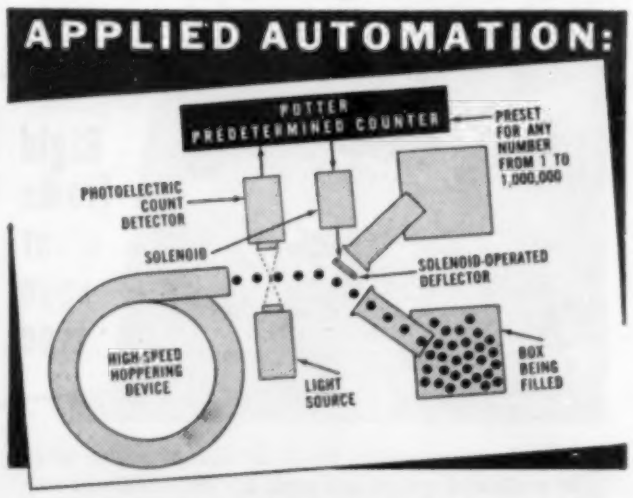
If you write maker identify as IEN - 9300

Star Stainless screws have CLEAN, BRIGHT-AND-SHINY HEADS

- Class 3 Screws
- Dowel & Taper Pins
- AN Drilled Fillister Heads
- Studs, Standard & Special
- Screw Machine Products
- Piano Hinges

Star STAINLESS SCREW CO.
ARmory 4-1240
212 Union Avenue • Paterson 2, N. J.
Direct New York Telephone: WIsconsin 7-9041

If you write maker identify as IEN - 9301



HOW POTTER COUNTERS SAVED MONEY FOR CONTINENTAL CAN

Potter Predetermined Counters automatically speed 7,200 bottle caps (at thousands per minute) into consecutive cartons. Oversize batches (necessary with weight and volume measurement) are eliminated.

An economical Potter counter can automatize your packaging or control system. Counters for batches for from 1 to 1 million, accommodating 60,000 units per minute, are available. Also available is a complete line of detectors for converting length, flow, revolutions, etc., into pulses.

Write today, describing your problem. Potter applications engineers will work out the details. No obligation, of course.

POTTER INSTRUMENT CO., INC.
115 Cutter Mill Road, Great Neck, L. I., N. Y.

If you write maker identify as IEN - 9302

NOW! CHOOSE THE HOBBS SLITTER BEST FOR YOUR MATERIALS!

From our three types of Hobbs cutters, use the best for your materials—shear-type, rotary contact, or razor-type. Easily handle tender, delicate film as well as heavier weights of paper, plastics and treated fabrics.

MODEL 45 SLITTER & REWINDER

Hobbs Slitters and Rewinders (formerly "Jacques") are low-cost, low maintenance machines. Warner electric clutch and brake enable smoother starts and stops — protect light materials. Adjust power to clutch simply by turning rheostat button! Three models now available to cut widths up to 30", 40", 45". Special design frictions rewind up to 18" diam. Some materials up to 20/1000" thick.

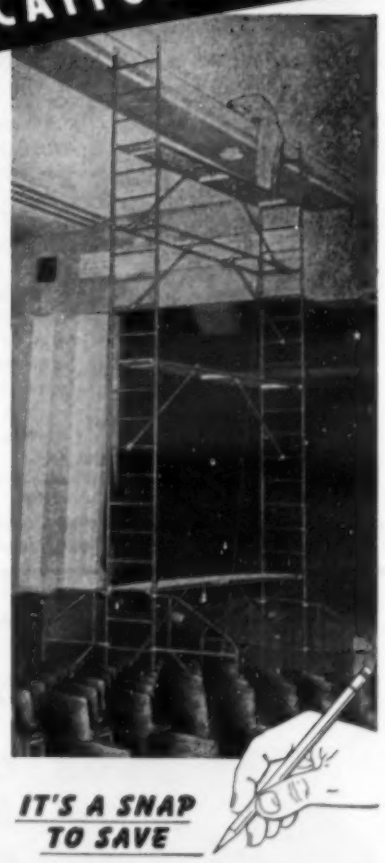
Send now for new, free booklet. Ask about free factory test run, using your material.

HOBBS MANUFACTURING CO.
40 Salisbury St., Worcester 5, Mass.
EST. 1888
New York Office: 132 Nassau Street
Chicago office: 549 West Washington Blvd

Manufacturers of Modern Converting Machinery

If you write maker identify as IEN - 9303

Overhead work's a SNAP! with the NEW Ladscaf SCAFFOLDING



No Bolting with Ladscaf 'LOCK-ON' CLAMPS

It's a snap to erect Ladscaf with these new positive-action clamps. Will not disengage until trigger is released.

UP FASTER

Quickly clamps together to build better scaffold faster. Ladder rungs are spaced just a foot apart.

SWIVEL ACTION

Stabilizers swivel back to move scaffold easily thru narrow aisles.

UP STAIRS

Ladscaf climbs stairs easily—reduces blocking to a minimum. 2-foot wide panels permit convenient passage around scaffold.

Write for informative, New Ladscaf Bulletin IE-8.

IT'S A SNAP TO SAVE

Call on Universal's layout and planning service to help you

on all Maintenance Painting and Decorating Problems

UNIVERSAL SCAFFOLDING

Ladscaf low-cost, welded steel ladder panels, eliminate bolting—are quickly erected with exclusive snap-on' clamps. Easily fits in confined areas—can be rolled on casters—and extended to straddle machinery.

Combine New Ladscaf with famous Universal Ezebilt steel-panels and Endlok pipe-and-clamp for difficult and unusual scaffolding jobs.

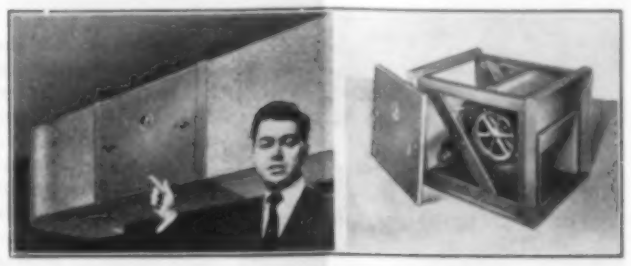
UNIVERSAL MANUFACTURING CORP. ZELIENOPLE, PA.

Distributors offer fast help and service. Consult your classified phone directory

If you write maker identify as IEN - 9305

Ventilating - Motor driven blower mounts in duct to promote air flow

Source: VIKING AIR CONDITIONING DIV.
5601 Walworth Ave., Dept. IEN, Cleveland 2, Ohio



Specifications and prices upon request

The blower and its belt connected motor in this new Universal assembly "floats" on resilient rubber shock mounts on its center of gravity within a flanged duct section. The blower assembly is isolated from the section by a felt seal around the edge of the outlet. The rubber mounts and the seal prevent metal to metal contact and absorb noise making vibration. The blower can be positioned to discharge up, down, to the right or left, in top horizontal or bottom horizontal position without requiring any adjustment in the motor sheave alignment or the belt tension.

Application can be made to draw in fresh air, to circulate and to exhaust stale air in connection with heating, ventilating, cooling. Two overall sizes measure 25 by 22 by 29½ in. and 27 by 27 by 33½ inches. Six capacities rate 600 to 3,400 cfm. The door can be employed on either sides of the duct section for access to the blower assembly.

If you write maker identify as IEN - 9306

Testing - Electronic instrument for high frequency signal detection

Source: GENERAL RADIO CO.
275 Mass. Ave., Dept. IEN, Cambridge 39, Mass.

Type 1216-A Unit I-F amplifier

A sensitive detector, for signals in the frequency range from 25 to 5,000 megacycles, is now available by using the company's new radio Type 1216-A Unit I-F amplifier with a Type 874-MR mixer rectifier and a suitable unit oscillator. The signal to be detected is heterodyned into the crystal mixer with a signal from a local oscillator to give a 30-mc. difference frequency which is fed to the I-F amplifier. A gain of 100 db. makes possible a sensitivity of about 2 microvolts of 30-mc. input for a meter deflection of 1 per cent over the residual noise.

An automatic volume control position is available on the panel switch for use with null type measuring devices. The meter remains on scale over a wide range of input signal levels with no reduction in maximum sensitivity when this control is employed. The amplifier is shielded and has a built-in attenuator that can be used with the panel meter to measure relative signal levels as well as insertion loss and attenuation characteristics of filters, cables and attenuators over the VHF and UHF bands. The amplifier lists at $365. Complete detector assemblies range from $628 to $667.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings. . . See Page 50

If you write maker identify as IEN - 9307

Now! Thread and Cut 4" Pipe in 44 Seconds with the New THRED-O-MATIC 44

No wrestling with stubborn chucks, no wrenches to worry about. Just push control button of Thred-O-Matic "44" and 4 jaws front and rear instantly and automatically grip, center and turn pipe.

Heavy duty, drive-all transmission has 4 speeds forward and reverse to give positive control of threading operation at all times. 4 high-speed dies in each quick-opening die head. Flat blade reamer attached to die head cleanly reams inside of pipe while threading.

Thred-O-Matic is powered with a 220-440 volt, 3 phase, 60 cycle 3 h.p. motor; magnetic switches assure overload protection. Thred-O-Matic is tops for removing tight fittings, handling smaller pipe, as well as assembling fittings. Because of its light weight (968 lbs.), it can be easily manhandled to the job in the field.

The THRED-O-MATIC "44" is a rugged production machine built and guaranteed by

QUIJADA TOOL DIVISION OF **GAINES-COLLINS**
5474 Alhambra Ave., Los Angeles 32, Calif.
Manufacturers of Automatic Threaders and Cutters for more than a Quarter Century

• Write today for new catalog IEN-8

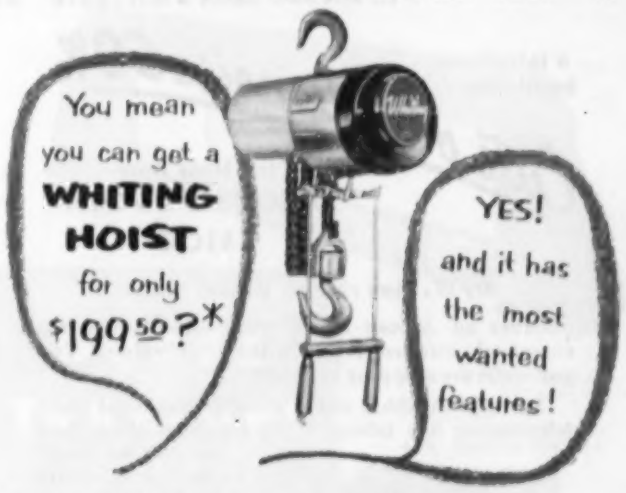
If you write maker identify as IEN - 9308

BROWNHOIST BUILDS
BETTER BUCKETS
• BUY DIRECT FROM FACTORY FOR LESS
• ROPE REEVE, LINK TYPE POWER WHEEL
• WRITE FOR CATALOG

INDUSTRIAL BROWNHOIST CORP.
BAY CITY, MICHIGAN

156

If you write maker identify as IEN - 9309



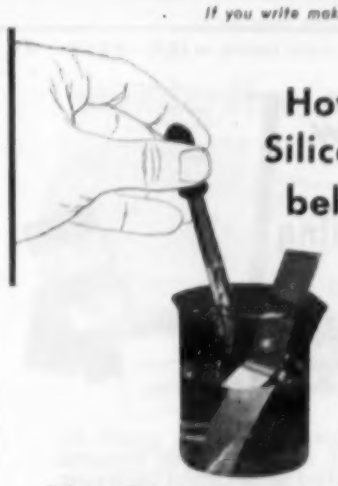
Low operating cost—Safe—Steel from hook to hook—Dual voltage motors for quick conversion—Whiting Warranty Plan for assured performance.

* *Model 5H300, 500 lb. capacity, $199.50 F.O.B. Harvey, Ill. Price subject to change without notice. Other models available up to 4000 lb. capacity.*

WHITING ELECTRIC HOISTS

WRITE FOR COMPLETE CATALOG!
WHITING CORPORATION
15629 Lathrop Ave.
Harvey, Illinois

If you write maker identify as IEN - 9310



How Metso Silicate Detergents behave with metals

An aluminum strip placed in a soda ash solution is immediately attacked but the corrosion stops when a few drops of silicate solution are added.

Metso Detergents protect aluminum, copper, brass, zinc, enamel and glazes.

Ask for a 16 oz. sample of Metso Detergent. Please describe what your cleaning operation is so that we can send you the proper Metso.

Metso Sodium Metasilicate (hydrated and anhydrous)
Metso 99 Sodium Sesquisilicate
Metso 200 Sodium Orthosilicate

Philadelphia Quartz Company
1131 Public Ledger Bldg., Philadelphia 6, Pa.

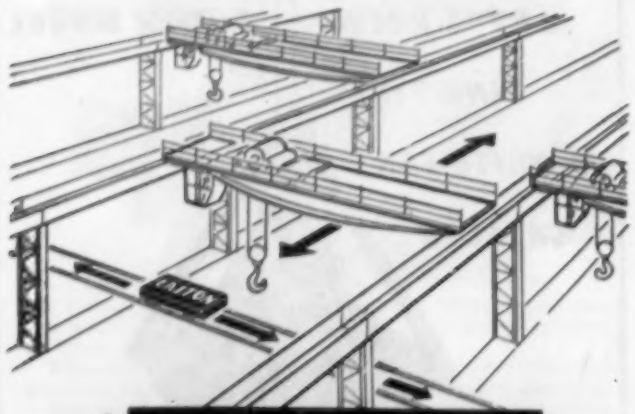
METSO® *detergents*

If you write maker identify as IEN - 9311

Cross-Bay Transfer

TRADE MARK

Automatic motor driven transfer cars provide a universal handling system in modern parallel bay plants now served by overhead cranes. Also for transfer between plant buildings.



A-1040

EASTON

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

If you write maker identify as IEN - 9312

. . a telephone booth that

Cuts outside noise 50%

the Hear Here ACOUSTI-BOOTH $100

Try it! . . you risk only shipping charges

Order an Acousti-Booth today . . if you're not completely satisfied, return it for a *full refund.* You pay only the shipping charges.

The walls of thick, sound absorbing material make telephoning like talking from a private office. And this Acousti-Booth takes less room than a large wall calendar. Attractive gray, hammered finish steel exterior.

$100 F.O.B. Chicago, Model 45. If you want light fixture, add $9.

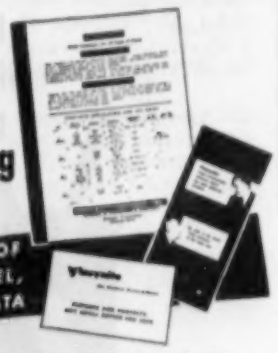
Ask for Bulletin A-131

ACOUSTI-BOOTHS

Burgess-Manning Company, Architectural Products Div.
5970 Northwest Highway, Chicago 31, Ill.

If you write maker identify as IEN - 9313

Get this *new* FREE kit on Metal-Finishing . . . Maintenance



INCLUDES ACTUAL SAMPLE OF VINSYNITE ON STEEL PANEL, PLUS APPLICATION AND USE DATA

Vinsynite is a metal pretreatment which greatly increases adherance of top finishes, resists rust and corrosion. It can be applied to *any* metal by simple brush, spray, dip or roller methods, needs no special equipment or chemical control. If you finish metal products or maintain metal structures, you should have this information.

SEND THE COUPON

SPECIALTY COATINGS, INC., Division of Thompson and Company
1000 Allegheny Ave., Oakmont, Pa.

Send us the new information kit about Vinsynite.

NAME_____

POSITION_____

COMPANY_____

ADDRESS_____

Vinsynite

COMBINES PROTECTION AND ECONOMY

If you write maker identify as IEN - 9314

Compressor - Miniature portable, three stage, motor or engine drive

Source: CORNELIUS COMPANY
550 39th Ave. N. E., Dept. IEN, Minneapolis 21, Minn.

Product Sheet 5

Illustrated is the motor driven assembly in the new Series-32 line of miniature air compressors having a pumping capacity of 0.6 cfm. of free air. This unit is available also in the same capacity with a gasoline engine drive. Both assemblies will compress 25 cu. ft. of free air to 2,500 lb. in 45 minutes. A companion Series 130 has pumping capacity of 2 cfm. of free air and will compress 25 cu. ft. to 3,000 lb. in 15 minutes. Both series are air cooled design and are equipped with integral oil reservoirs and interstage cooling.

The combination oil filter and moisture separator, supplied with each assembly, is rated for 3,000-lb. working pressure. It is made of aluminum with anodized finish for corrosion resistance. The filtering element is permanent. Pressure relief valves are self-resealing design. The assembly illustrated weighs 47 pounds. The weight is 37 lb. when a gasoline engine is employed in place of the electric motor. The two models, motor and engine driven, in the Series 130, weigh 79 and 58 lb. respectively.

Applications include pressurizing actuators, receivers, accumulators, charging demand type breathing apparatus, testing in laboratories and processes, service and maintenance of equipment. The inlet air can be passed through a solution to remove oxygen and eliminate any explosion hazard.

If you write maker identify as IEN - 9315

Cutting - Abrasive disc machine with pneumatic feed for spindle head

Source: STONE MACHINERY CO.
830 Fayette St., Dept. IEN, Manlius, N. Y.

Helps the operator

The company announces development of new air operated feed equipment to apply on its Types M-16, M-35 and M-75 abrasive disc machines. Air pressure from a shop line brings the cutting head down and returns it to "up" position. The feed movement includes fast approach, change to predetermined feed rate and fast return.

The power application does not interfere with manual operation of the machine or change the cutting capacity of the 16-in. disc on the M-75 unit or the 12-in. disc on the M-35 assembly. Control centers at a lever operated valve at the front of the housing. The new feed provides uniform cutting speed of 4 sec. per sq. in. of metal. Application can be made on equipment now in service or can be specified on new machines.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9316

it's BRAND NEW!

the No. 00

2 TON PRESS-RITE POWER PRESS

★ Replaces Kick Presses
★ Reduces Worker Fatigue
★ Ideal for Stamping and Punching
★ For Assembly and Other Operations
★ 3/4" Stroke 1" Optional

The New Press-Rite No. 00 is a heavy duty 2 Ton Press. Engineered for continuous hard service, ideal for stamping and punching smaller parts and secondary operations such as assembly and others. Eliminates many manual operations and reduces operator fatigue. This press will pay for itself quickly. Write for low prices and full information today.

Sales Service Machine Tool Co. SSMT

PRESS RITE PRESSES • SHAPE RITE SHAPERS • KILLER POWER HACK SAWS

2365 UNIVERSITY AVENUE • ST. PAUL W4, MINNESOTA

If you write maker identify as IEN - 9317

Ventilating - Motor driven fan to move the air in plant departments

Source: MONARCH ELECTRIC CO.
487 W. Main St., Dept. IEN, New Britain, Conn.

For worker comfort

Breezemaker is a new floor mounted fan particularly designed for industrial use. Assembly is on a heavy cast iron base and a 3-in. tubular steel column. The fan is enclosed in a guard that employs a structural frame and expanded metal. Three sizes are equipped with ½, ¾ and 1 hp. motors to drive the 30-in. impeller. Rating is 8,000, 12,000 and 15,000 cfm.

The motor can be specified in standard, open, totally enclosed and explosion proof design for operation on single-phase, two-phase or three-phase power input. Two available heights include support columns measuring 42 and 72 inches.

If you write maker identify as IEN - 9318

Cleaning - Acid solvent emulsion removes soil from fabricated aluminum

Source: NORTHWEST CHEMICAL CO.
9310 Roselawn Ave., Dept. IEN, Detroit 4, Mich.

Samples processed without charge

Cleaner No. 1 is a new non-corrosive acid solvent emulsion. It removes soil from fabricated aluminum parts prior to finishing operations such as anodizing, priming, zinc chromating, painting, plating. The material will not harm the aluminum at any bath temperature or immersion interval. It can be rinsed off quickly.

The bath is maintained by addition of water to replace evaporation and by small additions of the cleaning material. The liquid material itself is non-toxic and is safe to use. It is supplied in 55-gal. steel drums.

If you write maker identify as IEN - 9319

Connector - Duplex receptacle assembled in weatherproof housing

Source: PASS & SEYMOUR INC.
1307 Milton Ave., Dept. IEN, Syracuse 9, N. Y.

Chains retain caps

Number 4530 is a new surface mounting duplex receptacle enclosed in a cast aluminum weatherproof housing. The housing is fitted with bayonet locking caps. Electric connections are made through the rear in connection with a rubber grommet and a clamp. Provision is made for a third-wire ground. The aluminum box mounts a gasketed cover. The outlet caps also are gasketed in water proof design. Circuit rating is 15 amp. on 125 volts.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9320

BALE BREAKERS

CUSTOM-BUILT FOR EVERY BALE BREAKING PURPOSE

These powerful machines are alike in the way they apply power to make bale breaking an automatic machine operation.

They differ in feeds, material loosening mechanism and discharge features, to suit the requirements of various raw materials such as cotton linters, jute, straw, bagasse, etc.

Let us know what raw materials you receive in bale form. We will tell you about the Taylor Stiles Bale Breaker to open the bales faster and automatically.

TAYLOR, STILES AND COMPANY

44 BRIDGE STREET RIEGELSVILLE, NEW JERSEY

If you write maker identify as IEN - 9321

Dispensing - Motor driven machine for two preset lengths of sealing tape

Source: NASHUA CORPORATION
Dept. IEN, Nashua, N. H.

Bulletin, "88" Tay-Per

Either one of two predetermined tape lengths, ranging from 6 to 70 in., can be selected for delivery by depressing one or the other of two color coded foot switches with this new National "88" Dual Length Tay-Per. The operator loosens a lock at the side of the machine and sets a dial selector to the two desired lengths, such as 24 and 36 in., for the width and length of a carton. Then he tightens the lock and the machine is ready for operation. The tape is delivered moistened.

The machine is adjustable for any brand and type of tape. It is equipped with a plastic water bottle and a heated tank for warm water moistening. A self-sharpening hardened steel knife requires no adjustment. It will cut reinforced or plain tape. The machine takes standard rolls of paper, cloth or fiber reinforced tape from 1 to 4 in. in width.

If you write maker identify as IEN - 9322

Hard Facing - Fusible paste for use on thin blades, knives, discs

Source: MIR-O-COL ALLOY CO.
312 North 21 Ave., Dept. IEN, Los Angeles 31, Calif.

Free sample upon request

Miracle Paste is a new material for application with a spatula or putty knife followed by fusing with an oxyacetylene torch or a carbon arc. A small blade can be hard faced in about 15 minutes. The material is particularly suited for parts such as plow shares, bean knives and disc blades.

If you write maker identify as IEN - 9323

Handling - Double clevis link to assemble chain slings and hitches

Source: THOMAS LAUGHLIN COMPANY
61 Fore St., Dept. IEN, Portland 3, Maine

Heat treated pins

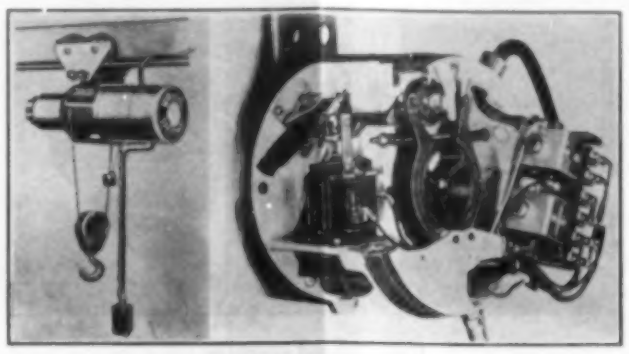
Cotter pins ride in guarded position through the two pins in this new connecting link to assemble chain to rings, end links, shackles, eyes for field make-up of slings and hitches. The link is available for ¼ to ½-in. of chain in five sizes. Its strength exceeds that of proof coil, BBB and high test chain.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9325

Hoist - Drum type electric, ¼ to 2 ton rating, 12 to 40 ft. lift

Source: AMERICAN CHAIN & CABLE CO.
929 Connecticut Ave., Dept. IEN, Bridgeport 2, Conn.



Illustrated details in Bulletin DH-133B

Frame 1, in ¼ to 1-ton capacity, and Frame 1½, to 2-ton capacity, are new designs in the company's Wright Speedway line of electric hoists. Each unit in the new line has been designed to provide quick access for inspection and maintenance and simplified design to minimize maintenance requirements. Covers can be removed to expose the controller, the motor brake and its solenoid operated coil, the transformer for the low-voltage control circuit and the limit switch.

The gear transmission that connects the motor to the load drum operates in oil in a closed chamber. The drum has sufficient length for the rated lift of the hoist without overlapping the Trulay Preformed wire rope. The multiple disc Weston type load brake operates also in oil also. It will hold the load at any point of travel. It operates independently of the motor brake which releases by action of a solenoid operated cam when the motor circuit is closed. This brake grips to stop rotation and prevent hook drift by spring action when the solenoid is de-energized and the cam is rotated.

The welded steel hoist frame is available with lug or trolley suspension. The trolley is equipped with steel side plates, chilled tread iron wheels and anti-friction bearings. The rotating shafts in the hoist also operate on ball or roller bearings. The motor is totally enclosed, of standard NEMA specifications. It will operate on any duty cycle for which a 1½-hp. 30-min. NEMA motor is suited. Hoist speed ranges from 5½ to 63 fpm. in the various sizes in the line.

If you write maker identify as IEN - 9326

Layout - Chalk line reel with 50 ft. of line and chalk holder

Source: CEDARBERG MFG. COMPANY
527 S. 4th St., Dept. IEN, Minneapolis 15, Minn.

Refills easily

Dandee No. 54 is a new crank operated aluminum chalk line reel with a chalk holder covered by a rubber cap. The holder takes powdered colored chalk which the company is prepared to supply so the line will be properly chalked for layout purposes as soon as it is drawn out of the housing.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9328

SAVE CHROMIC ACID WASTE UP TO 70%

USE *UDYLITE* ZERO-MIST

Zero-Mist is an amazing new additive that completely eliminates chrome mist and spray. It saves you dollars in chromic acid costs because it saves up to 70% of chromic acid waste.

In using Zero-Mist there are many other savings:

Drag-out losses reduced by 50% or more.
Lowers rinse requirements and rinse contamination.
No spray contamination of other solutions.
Eliminates need for water wash systems.
Drastically reduces chrome stains.
Indestructible at all temperatures and in all concentrations.

Only small quantities of Zero-Mist need be added to protect drag-out losses.

Call your Udylite representative today for complete details or write direct to...

THE Udylite CORPORATION
DETROIT 11 • MICHIGAN

If you write maker identify as IEN - 9329

DODGE TAKE-UPS

— THEY'RE MODERN
— 7 TYPES
— ASK ABOUT THEM!

MODERN, rugged, *dependable!* A great range of types and sizes—for everything from light loads to heavy loads. Babbitted, Bronzoil, SC Ball Bearing, Dodge-Timken Type E Roller Bearing, Angle Frame, Protected Screw. Shaft sizes from 1/2" to 4". Travel from 4" to 48". Stocked by Dodge Distributors. Write us for details.

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.
FIRST IN POWER TRANSMISSION MACHINERY

If you write maker identify as IEN - 9324

DO YOU KNOW THESE FACTS ABOUT PRE-FINISHING?

Know how to keep your finishing process from becoming outdated? Switch to prefinished ENAMELSTRIP. A few facts about this pioneer process will show you it pays to finish the modern, ENAMELSTRIP way:

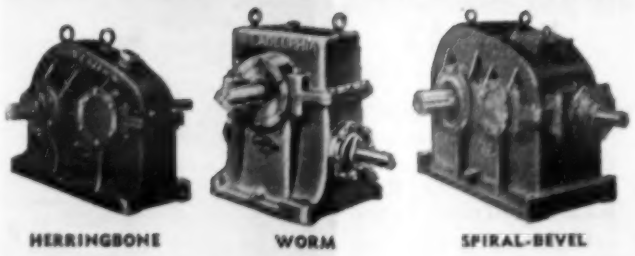
- Coats and colors metal before fabricating.
- Eliminates costly operations.
- Comes precision-slit to your specifications in a choice of metals.
- Non-anodized organic finish, withstands all Fabricating stresses.
- Finished in one, or two colors (one on each side).

GET ALL THE FACTS ON ENAMELSTRIP in our new *full-color bulletin.* Send for yours today.

THE COATED COIL CORPORATION
511 West 30th Street, New York 1 • LOngacre 5-3161

If you write maker identify as IEN - 9327

SPEED REDUCERS



HERRINGBONE WORM SPIRAL-BEVEL

all types, sizes and ratios

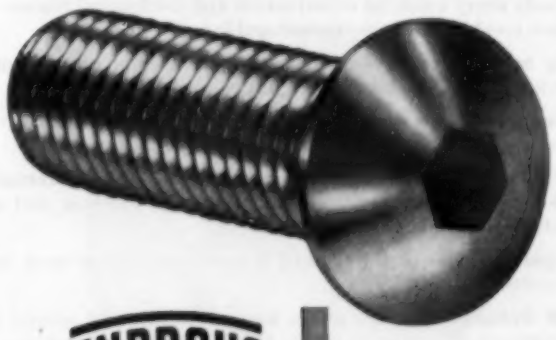
. . . produced by a Pioneer in the design and manufacture of Gear Reducers for industrial use . . . available in following types: Worm, Herringbone, Spiral-Bevel Herringbone, Spiral-Bevel Helical, Spur, Planetary, etc. . . . also in the well-known, "MotoReduceR" (in horizontal or vertical drives),—and the Philadelphia "GearMotoR", horizontal, self-contained reducer for drives up to 60 H.P., and all types and sizes of gears.

Complete catalogs on any type of Reducer, sent upon request.

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as IEN - 9330

standardize on standard



UNBRAKO button head SOCKET SCREWS

where countersinking isn't practical

Heat treated alloy steel gives them greater strength. Hex socket minimizes danger of marred or mutilated heads even when the screws are used again and again. Low head height streamlines designs. Stocked and sold by leading industrial distributors everywhere. Write for UNBRAKO Standards. • STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

UNBRAKO SOCKET SCREW DIVISION sps JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 9331

If you write maker identify as IEN - 9332

Designed and engineered with the user in mind, O-M Cylinders embody every essential construction and mechanical feature to assure trouble-free performance and long service.

They are built of steel with bearing surfaces of bronze—precision machined with modern equipment.

Cylinder bores are honed to a fine finish, and the hi-tensile piston rods are polished to give long life and smooth performance.

Effective O-ring static seals are backed up to prevent extrusion under high pressures. All packings are self-adjusting and are carefully selected for proper usage.

A rigid inspection at the factory is your guarantee of peak performance.

O-M Cylinders fit where others won't because O-M special interlocking mechanism eliminates bulging tie rods and end caps.

Available in a full range of sizes (1½" to 8" bores) with standard, 2 to 1 or oversize rods. *14-day delivery on most sizes.*

Write today for FREE catalog and complete set of ½ and ¼-scale templates showing all cylinders and mounting brackets.

MAIL COUPON TODAY!

ORTMAN-MILLER MACHINE COMPANY
1208 150th Street, Hammond, Indiana

☐ Have representative call
☐ Please send latest O-M Catalog ☐ Complete Templates

Name _____ Position _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 9334

Generator - Engine driven unit to replace battery on an electric truck

Source: READY-POWER COMPANY
3826 Grand River Ave., Dept. IEN, Detroit 8, Mich.

Rides behind operator

Model HA-3 is a new assembly of engine driven generator, starting battery, fuel tank, accessories and controls to provide electric current for the motors on a sit-down type of electric truck. The unit applies on trucks rating 1 to 2½ ton without need for seat alteration.

The instrument panel is located on the left hand face of the housing facing forward where it is within easy reach and view of the operator and is protected against damage. The fuel tank and starting battery are located in compartments outside of the engine-generator housing. The muffler is placed inside the housing so the unit can be installed at the extreme rear of the truck power compartment to provide for maximum seat space and to act as additional counter weight.

Removable louvered plate, on the left hand end of the unit, permits access to the generator and instrument panel for servicing. A hinged cover provides access from the top to the complete assembly. Lefting eyes on the two ends of the housing permit placing and removing the unit quickly.

If you write maker identify as IEN - 9335

Gage - Hinged vane assembly signals need to renew air filters

Source: BACHARACH INDUSTRIAL INSTRUMENT CO.
7301 Penn Ave., Dept. IEN, Pittsburgh 8, Pa.

Made of plastic

This new gage mounts on the outside wall of the suction chamber surrounding an air blower after two holes have been drilled through the chamber wall to connect through the back of the gage housing. These holes communicate suction pressure inside the plastic gage housing. The suction applies above a hinged panel that closes an air inlet through the bottom of the gage housing from the outside of the chamber. Increase in suction, due to dirty filters, will pick up the panel so the words "renew filter" appear as shown.

A magnet and a second vane, behind the one that signals, are employed to make initial adjustments so the unit will signal about a week before the filter requires replacement or cleaning and thus eliminate the need for emergency service. Dimensions are about 2½ in. in width by 4 in. in height.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9336

THIS SHOULD HAPPEN ONLY HALF AS OFTEN!

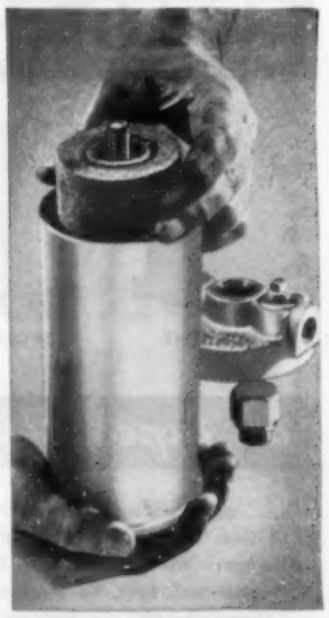
Eliminate half the cartridge replacements—select Cuno MICRO-KLEAN micronic filters.

Exclusive "graded density in depth" doubles dirt capacity, prevents clogging. Exclusive resinous impregnation and polymerization prevent shrinking, swelling, channeling.

When replacement *is* required—it's *quick* and *clean.* Housing easily disassembled.

Guaranteed densities. 10, 25, 50 microns. Capacities: from a few to over 800 gpm. Handles wide range of fluids, flow rates, viscosities.

Write for Bulletin MK-035. Cuno Engineering Corporation, 697 South Vine Street, Meriden, Connecticut.

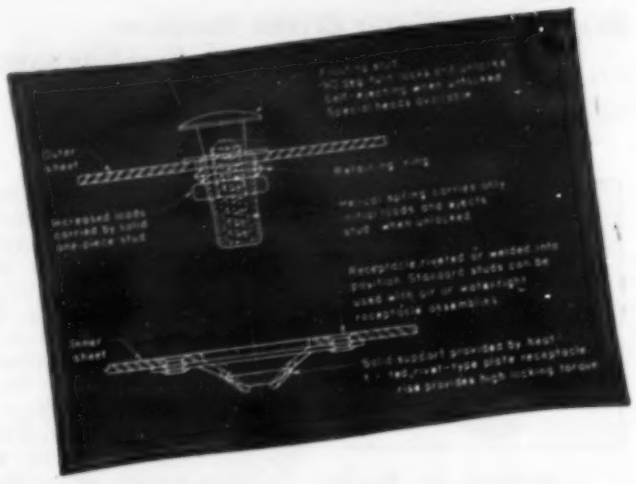


CUNO

Fluid Conditioning

Removes More Sizes of Solids from More Types of Fluids

If you write maker identify as IEN - 9337



HOW QUICK-LOCK CUTS FASTENING COSTS

QUICK-LOCK speeds up the mounting and demounting of detachable panels, works equally well on curved or straight sheets. It is adaptable to many different fastening applications in the aircraft, automotive, railroad, electrical and appliance fields. Write for literature and samples today.

SIMMONS FASTENER CORPORATION, 1758 No. Broadway, Albany 1, New York

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FASTENERS THAT IMPROVE PRODUCTS AND REDUCE ASSEMBLY COSTS

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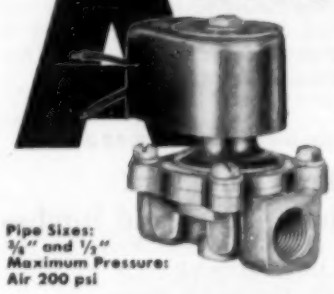
Announcing



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2-Way Solenoid Valve
for controlling the flow of Air, Gas, Light Oil, Water, Brine, Freon, Methyl Chloride, etc.

BULLETIN 8210-A
SOLENOID VALVE
(about 2/5 actual size)
Normally Open and
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The most important development in years in compact design for 2-Way Solenoid Valves

Pipe Sizes: ¾" and ½"
Maximum Pressure: Air 200 psi

featured by

- **Simplicity** – two operating parts: flexible diaphragm and stainless steel core
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Experience Shows "There's an ASCO Valve for Every Problem"

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ASCO Solenoid VALVES — Automatic Switch Co.
383 LAKESIDE AVENUE • ORANGE, NEW JERSEY

If you write maker identify as IEN - 9339

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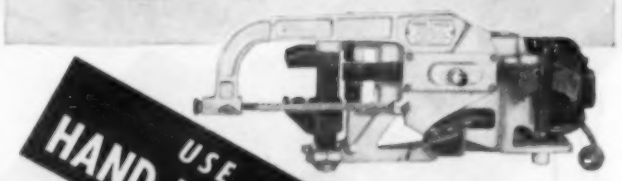

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ONE HAND CARRIES IT

The only TRULY PORTABLE Hack Saw Machine.

Hand-I-Hack is the first genuinely portable hacksaw machine. You can take it *to the work.* It will cut in *any* position. Save elbow grease—the most costly power known.

Simply clamp your work in the HAND-I-HACK swivel vice . . . set blade . . . start motor. HAND-I-HACK does the rest. Shuts off automatically when cut is finished.

HAND-I-HACK can do 95% of all sawing jobs usually done by hand. Uses low-cost 10" hand blades which last 3 to 5 times longer . . . because HAND-I-HACK operates on draw cut and lift return principle. Capacity 3" x 3".

WRITE TODAY for full information, and name of nearest dealer.

*Trade Mark Reg. U. S. Pat. Off.

Lipe-ROLLWAY CORPORATION
812 Emerson Ave. Syracuse, N. Y.

If you write maker identify as IEN - 9340

Hundreds of PROFITABLE USES for—

Use these versatile flexible shaft tools

for all kinds of shop work including die sinking, polishing, reaming, grinding and similar jobs. They're quickly and easily coupled to any electric motor with ⅜" or ½" diameter spindles.

They come in two sizes. The 700 Series for precise, delicate work use .092" shank diameter tools. The 500 Series for heavy duty service use tools with shank diameters up to ¼".

WRITE FOR THIS CATALOG. CATALOG T-51 describes Flexarms and many other S. S. White tools for industry. Send for your copy today.

THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO.
Dept. N, 10 East 40th St.
NEW YORK 16, N. Y.

Western District Office • Times Building, Long Beach, California

If you write maker identify as IEN - 9341

Air view of Nabisco's new Chicago bakery indicates its unusual architectural conception as well as its huge size.

B&W Integral-Furnace Boilers, Type FM, in service at Nabisco. Delivered completely shop-assembled, FMs are ready to skid or lift into position, connect to services, and place in operation.

keeping steam cheap . . .

World's Largest Bakery

served by 3 B&W

Integral-Furnace Boilers, Type FM

Typical of the increasing demand for the B&W Type FM Boiler was the choice of a multiple-unit installation for the largest, most modern bakery in the world, capable of producing 167 million pounds of baked goods annually. Occupying 12 acres of a 45-acre site, National Biscuit Company's new Chicago bakery is an outstanding example of scientific application of straight-line mass production methods combined with the highest standards of cleanliness and sanitation, and striking achitectural beauty.

Since January 1952, the three FM units have been generating steam for heat, hot water, and various processing operations, such as melting shortening for easier unloading from tank cars and to facilitate its distribution within the plant.

Designed to produce 25,000 lb of steam per hr each at 110 psi pressure, the B&W Units are oil-fired—make a positive contribution to the elimination of smoke and fly ash required by Nabisco. Choice of the three FM boilers rather than a single, larger unit resulted after careful consideration of all factors and a realization that the FM unit offers the benefits of "package" steam combined with many cost-saving big-boiler advantages.

Satisfaction with the performance of the B&W Type FM Boiler is proved by the number of units in service and on order for industries, utilities, and other users in practically every category. In terms of total steam capacity they add up to about 9,000,000 lb per hr, and better than half of this capacity is in multiple-unit installations. The compact, shop-assembled FM is available in standard sizes for loads ranging from 2900 to 36,000 lb per hr at steam pressures to 235 psi—is also available for higher pressures. G-642

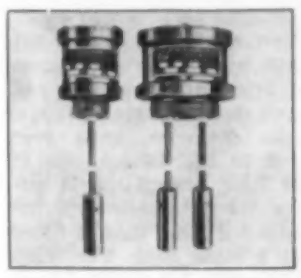
Bulletin G-76A describes in detail the many cost-saving features of this self-contained, popular small boiler. Write for your copy. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd St., New York 17, N. Y.

BABCOCK & WILCOX BOILER DIVISION

If you write maker identify as IEN - 9343

Transducer - Probe fittings for level control in conductive liquids

Source: PHOTOSWITCH INCORPORATED
77 Broadway, Dept. IEN, Cambridge 42, Mass.



Bulletin PF-544

Series 67 designates new design of the conductive liquid probe fitting, previously described IEN-11030-50. It applies, as in the previous design, to furnish a minute electric current that is put through an amplifier to operate a control relay. The housing can be made of bronze, cast iron or No. 316 stainless steel. Each contains threaded openings for conduit connection.

The fittings are adaptable to any probe length from 2¾ to 108 in., employing standard stainless steel extension rods. Designs, with insulated suspension wire and heavy probe tips, can be specified for lengths over 108 inches.

Metal parts, making contact with the liquid, are No. 303 stainless steel. The probe rods are insulated with teflon which is inert to chemical attack and boiling solvents. The insulation prevents formation of moisture film in saturated atmospheres.

Input to the probe is through a control connecting to 110 or 220-volt ac. for a maximum 11½ volts in the probe circuit and current ranging from 60 milliamperes to 1 microampere at maximum resistivity. Resistors are selected and employed in the control housing to match the resistivity of the liquid to be controlled.

The fittings can be set up with their controls to start and stop pumps or open and close a signal circuit. Several fittings can be mounted in the same tank for a variety of pumping operations. Maximum temperature is 300 deg. F. Maximum pressure is 250 lb. when the probe housing is made of bronze or stainless steel. Installation is in a pipe opening threaded for ½, 1 or 2-in. pipe depending on the model.

If you write maker identify as IEN - 9344

Lock - Tamper proof enclosure for Vickers hydraulic control valves

Source: CROSS COMPANY
3250 Bellevue Ave., Dept. IEN, Detroit 7, Mich.

Protects setting

A mounting plate, side walls and a hinged locking cover make up the assembly of this new Flow Control Lock. It has been designed to enclose a Vickers ¼-in. flow control valve. It locks in closed position to prevent unauthorized tampering with the valve setting.

Installation follows removal of the valve name plate and adjusting lever to insert the mounting plate under these parts. Then they are returned to position and the assembly is complete. The lock takes up the same area as the face of the valve body and projects in front only enough to provide clearance over the feed setting lever. Models are available for the Vickers ¼-in. valve and remote control panel.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9345

UTICA® KOLDWELDING Tool KL-10 for Lapwelding of aluminum foil and sheet or strip up to .040 or over all of .080.

You never saw aluminum welded so quick and easy! Photo shows .004 aluminum foil shielding just as it comes out of the UTICA® Lapwelder.

UTICA® KOLDWELDING Tool KB-14 for buttwelding (above) makes perfect welds without heat, electricity or flux in just seconds. Operates with many non-ferrous metals.

To get more facts and data on this new type of welding send today for UTICA Koldwelding brochure.

NOW...

KOLDWELD ALUMINUM

or other non-ferrous metal sheet

Easily, quickly

without heat • without solder without crimping

New UTICA® Lapweld Tool KL-10 Koldwelds by hand pressure alone, makes perfect welds and weighs less than 3 lbs. It's easily portable from job to job. Koldwelding employs no heat, electricity or flux. No special skill required. Yet it does equal or better work than conventional welding equipment which costs more and is non-portable.

One set of Utica precision dies will Koldweld all gauges of foil from an over all thickness of .002 to .026, and other interchangeable dies will Koldweld sheets to a maximum thickness of .040—total weld .080.

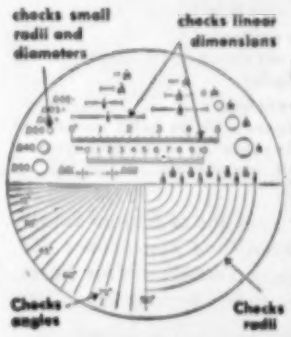
UTICA

DROP FORGE & TOOL CORP.
KOLDWELD DEPT.
Utica 4, New York

If you write maker identify as IEN - 9346

THE **Original** BELL & HOWELL

Pocket Comparator



Saves time and money inspecting small dimensions

• Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

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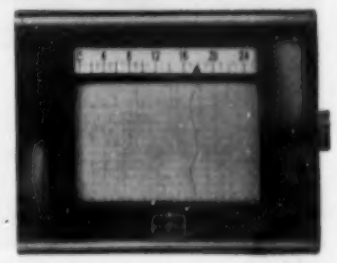
Write for FREE descriptive folder

If you write maker identify as IEN - 9347

....WHAT'S NEW AT BRISTOL....

CONTINUOUS STANDARDIZATION with no dry cells

. . . in Bristol Electronic Dynamaster Potentiometers and Pyrometers



• **CONTINUOUS STANDARDIZATION** eliminates need for dry cells—supplies voltage that is continuously compared with standard cell.

• **CONTINUOUS OPERATION—NO TIME OUT.** With continuous standardization, the potentiometer is free to continuously measure, record, and control. No time out or interruption is required for periodic standardization.

• **NO STANDARDIZING MECHANISM.** Continuous standardization is taken care of electrically. There is no standardizing mechanism.

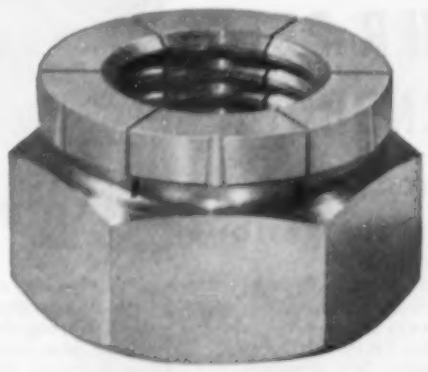
For the complete story on the modern Bristol Dynamaster, write for free 35-page booklet P1245. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn. 3.19

BRISTOL *THE DEPENDABLE GUIDEPOST OF INDUSTRY*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as IEN - 9348

they're ONE piece, ALL metal...



no parts to work loose or get lost

Because they are one piece—nothing to assemble, come apart, lose or forget—FLEXLOC locknuts save production time. Because they are all metal, they lock and stay tight at higher temperatures. See your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

FLEXLOC LOCKNUT DIVISION

SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 9349

Meet every test in copper line service

JENKINS Solder-End VALVES

Easy to install
— accurate fit to tubing

Positive control
— will not distort under intense heat of soldering

Lasting economy
— designed with an extra measure of endurance to withstand unusual strain in operation

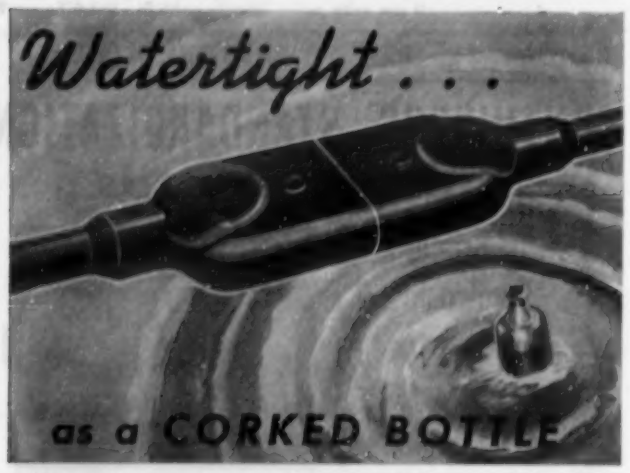
SEND FOR THIS NEW FOLDER

Describes complete line of Jenkins Solder End Valves, gives dimensions, and instructions for installation. Ask your Jenkins Distributor for Form 198, or write for your copy today. Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS DIAMOND MARK

JENKINS VALVES

If you write maker identify as IEN - 9350



Moisture cannot penetrate the one-piece Neoprene body of a JOY electrical plug . . . when engaged, even its contacts are enclosed in a protective Neoprene housing through the *cork-like* action of JOY's famous water-seal. Permanently vulcanized to cable, it cannot crack . . . won't lose its shape . . . and requires no special considerations to insure a long life of useful service. A favorite since '26, JOY electrical connectors are now available in styles and sizes for nearly any portable electrical power transmission need. Why risk electrical misfits when the best actually costs less, in the long run? For more details ask for your free copy of Bulletin MC108 today!

ME 182.4

MORE THAN 100 YEARS OF ENGINEERING LEADERSHIP

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 9351

THE BLISS

POWER PRESS HANDBOOK

700 PAGES

400 ILLUSTRATIONS

Need a hand with press problems? Reach for the Bliss Power Press Handbook—more than 10,000 others already have. It's a handy and authoritative reference of data for engineers, production executives and trainees.

Sections cover press job computations • proper die selection • engineering tables • die illustrations • service instructions for Bliss presses • complete glossary • and an index. "One or several are needed in every stamping shop," says *American Machinist*.

Its soft cover, black Morocco binding and gold lettering make the handbook a handsome addition to any technical library. So order your copy today . . . and one for the shop. $7.50 each. Use the handy coupon below.

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1421 Raff Road, S. W., Canton, Ohio

Rush me a copy of the Bliss Power Press Handbook

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If you write maker identify as IEN - 9352

Signaling - Indicator lights for finger applied slide base lamps

Source: DIALIGHT CORPORATION
60 Stewart Ave., Dept. IEN, Brooklyn 37, N. Y.

Catalog L-151, 153, 154

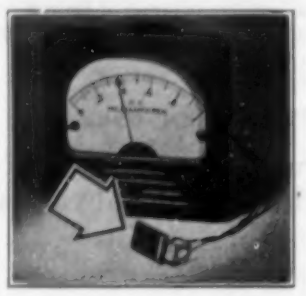
New series of indicator lights, with a choice of screw and friction fitted caps and flat or convex lenses of ⅝ and ½ in. diameter, have been added to the Dialco line of pilot light assemblies. It employs the telephone type incandescent lamp that is fitted with a slide base. The lamp can be applied or removed from the light by finger action. No extractor or other type of tool is required.

Mounting is in a 3/16-in. hole. Adjacent units can be placed on ¾-in. minimum centers. Solder terminals or binding screws can be specified. The company is prepared to supply free samples without charge for design purposes when requested on company letterhead.

If you write maker identify as IEN - 9353

Transducer - Photoelectric cell, 60 microamperes at 100 foot candles

Source: INTERNATIONAL RECTIFIER CORP.
1521 E. Grand Ave., Dept. IEN, El Segundo, Calif.



Bulletin ER-205

Overall dimensions of this new Type B2M selenium photoelectric cell are about ¾ by ½ inch. The unit is mounted on a self-contained foot bracket extension and is particularly designed for use by engineers and experimenters. Active area of the unit is 0.26 sq. in. with output rating at 60 microamperes at 100 foot candles of illumination.

The cell can be connected directly to a milliammeter by its 6-in. pigtail leads and employed as a light measuring device as shown in the illustration. It can be designed into ambient light relays or employed as a "sun battery" to convert solar energy into a power supply for transistorized equipment. A number of cells can be mounted in series or series-parallel to meet given current requirements.

If you write maker identify as IEN - 9354

You can purchase drill blanks made of high speed steel from stock from Hayden Twist Drill Co., 8626 Lyndon Ave., Dept. IEN, Detroit 38, Mich., for a variety of uses. The stock blanks are available in seven ranges of tolerance from units lapping to a tolerance of 20 millionths of an inch to unground blanks in an assortment of sizes. Stock sizes range from No. 80 wire to ⅝ inch. Typical uses are in making gages, test bars, dowels, pivots, mandrels, tool bits, reamers, ejector pins, jig locating pins, scribers, punches, chisels, screw extractors, rollers.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 9355

POWERFUL AGITATION
Cleans Parts **FASTER BETTER**

TURBO BLAST

CLEANING MACHINES

Impeller creates tremendous force to remove grease, oil, carbon, sludge, dirt. No limit to applications. Saves 1/3 to 1/2 on time and cost over other methods.

Model JR 20
(20 gallon capacity)
List price
$214.50
Less gun and basket

OTHER MODELS UP TO 50,000 GALLON CAPACITY

STORM-VULCAN, INC.
2225 BURBANK DALLAS, TEXAS

SEND FOR INFORMATION

Please send me Turbo-Blast information.

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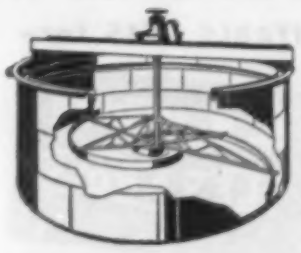
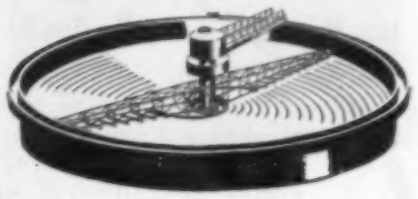


HARDINGE THICKENERS AND CLARIFIERS



Hardinge THICKENERS or CLARIFIERS have solved problems for the following industries with water treatment, wastewater disposal or by-product recovery difficulties: coal, paper, oil, glass, lime, stone, sand, carbon black, meat packing, rubber, domestic sewage and others.

Available for steel, tile, wooden or concrete tanks up to 200' diameter with the famous "Auto-Raise" feature to prevent scraper breakage. Write for Bulletin 31-D-38.

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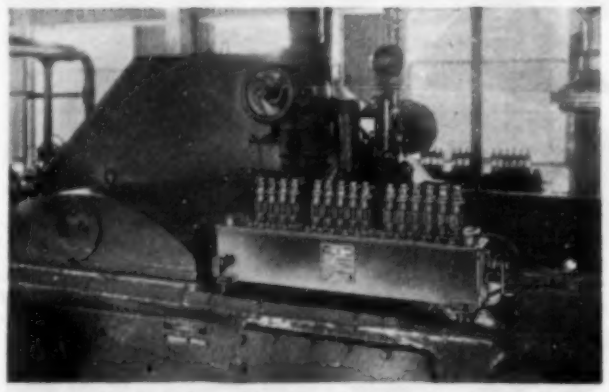
If you write maker identify as IEN - 9357

IS DOWNTIME UPPING YOUR COSTS?



cut it with Manzel Lubricators

Because they operate automatically—dependably lubricating vital parts without thought or attention whenever machinery is running—Manzel Force Feed Lubricators eliminate costly shut downs. They save labor and lubricants, too.

Keep costs down and production up with Manzel Force Feed Lubricators. They can be installed on machinery you are now using or incorporated into new equipment. For information write:

Manzel

DIVISION OF FRONTIER INDUSTRIES, Inc.
242 BABCOCK ST., BUFFALO 10, NEW YORK

If you write maker identify as IEN - 9358

LINEMASTER
"LEKTRO-LOK"
FOOT SWITCH

SMALL..
SENSITIVE..
SAFE!

Only
$5.25

Lektro-Lok is dependable because it's *automatically* safe—a mechanical interlock allows only one circuit to function at a time! Lektro-Lok operates on a teeter-totter principle with selective circuits—yet a single cord receptacle eliminates costly harness assemblies.

Lektro-Lok is lightweight—only 10 oz.—but built for stamina, with a rugged stamped metal case. You can depend on Lektro-Lok to give you years of trouble-free service—it's made by LINEMASTER, the leader!

Let us quote on your special problems.

Write today for catalog and price list

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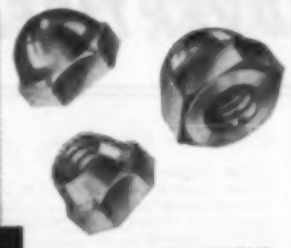
426 Woodstock Terrace
Woodstock, Conn.

If you write maker identify as IEN - 9359

NO tool marks!
NO cut-off burrs!



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. . . AND THEY NEED NO PROTECTIVE FINISHES IN MOST APPLICATIONS! Like all GRC die cast fastenings, they are non-ferrous, rustproof, and corrosion-resistant. GRC zinc alloy fastenings are furnished with clean threads and a bright finish that withstands normal usage —are available in all commercial finishes when desired.

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Write today for samples, low prices and bulletins.

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GRC WING SCREWS
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Exclusive Finger-Grip Design!
GRC SMALL TUBULAR RIVETS
Diameters up to 9/64"
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If you write maker identify as IEN - 9360

ELCO
Specials

FOR EXAMPLE

This special screw was formerly made in two parts and spot-welded together. Elco now produces this part, in one piece, by the Cold Heading method at a savings of $13.26 per thousand.

OVER 30 YEARS EXPERIENCE MAKING SPECIALS AND STANDARDS

ELCO TOOL AND SCREW CORPORATION
1956 BROADWAY • ROCKFORD, ILLINOIS

I WISH I HAD...

(Continued from Page 104)

SURPLUS . . . "I wish we had a buyer for a half-million assorted sizes of plastic and aluminum binding screw posts for folders and booklets. Sizes range from 3/32 to 3/4 inch. All are packed in original boxes and are in storage in Dayton, Ohio. We will send samples on request." **IEN W-87**

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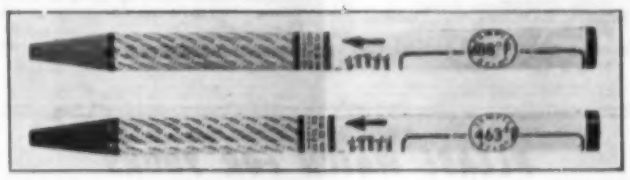

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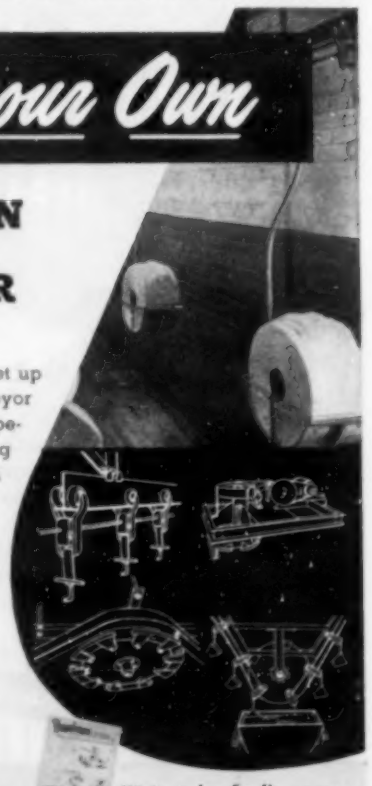

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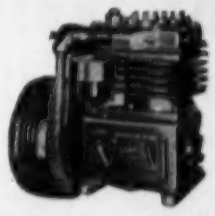

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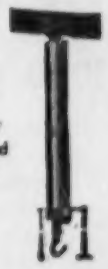

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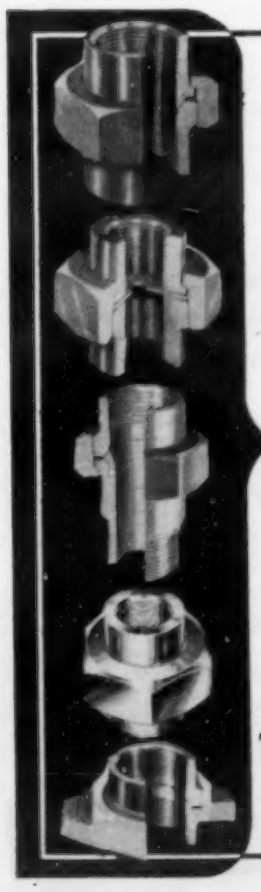

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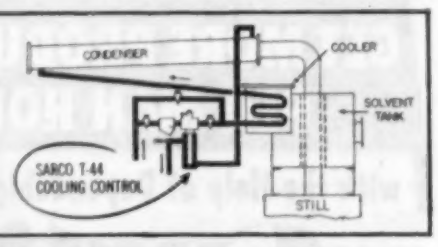

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ENGINEER . . . "I wish I had contact with a firm in the United States which could use my 30 years of experience in heavy construction and power utility operation. I am located at present in Latin America, but desire to relocate my family in the United States." **IEN W-80**

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(Please turn to Page 101)

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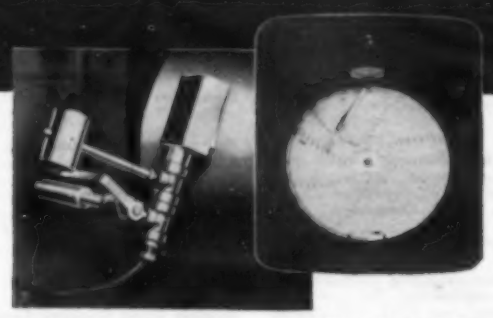

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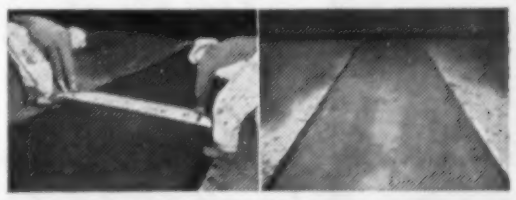

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